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Retiring Managing Editor of the American Economic Review

The Executive Committee has accepted with regret the resignation of Paul Homan as Managing Editor of the *Review*. During the eleven years of his editorship, he has brought the *American Economic Review* to the eminent position which it now deservedly enjoys. The Executive Committee believes that it speaks for the entire Association in expressing its appreciation to Professor Homan for a job well done.

With this issue, the managing editorship passes into the hands of Professor Bernard F. Haley of Stanford University.

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THE CURRENT STATE OF PROFIT THEORY

By RICHARD M. DAVIS*

It is commonplace that economists spend a discouraging proportion of their working time in controversy over definition. It may be less commonplace, although surely not original, that much of that difficulty arises from failure to recognize the implications of an elementary principle of taxonomy: when the point of view from which phenomena are classified is changed, alterations in both the composition and behavior of the groups observed must be expected. This means, for instance, that when people are classified according to their rôle in the productive process, we should not expect to find the same people in the same groups as when they are classified according to the supply conditions of their services or according to the degree of perfection of the markets in which they sell those services. Nevertheless, by a series of linguistic accidents we find ourselves using the same term for quite diverse collections of phenomena and have been misled into thinking that we are talking about the same groups simply because we have given them the same names.

Nowhere is the failure to keep terminology consistent more painfully apparent than in distribution theory. The present paper will examine the field of current profit theory. The anarchic condition of that theory is notorious; that that condition is largely due to verbal disagreements is widely suspected; that those verbal disagreements are largely the result of simple failure to observe the most elementary principles of classification may become evident as the discussion progresses. My observations will deal with three principal areas: (1) efforts to refine

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further the concept of profit as an element in individual incomes; (2) efforts to define profit as the income of a definable class in the economic and social population; (3) efforts to relate the concept of profit as a distributive share to the discussion of the determinants of such macroeconomic variables as income and employment.

The preconceptions of the theory discussed in the first section are derived from J. B. Clark's view of profit as a purely dynamic surplus, an unimputed element in the income of business enterprises. The approach to the problems which arise in viewing profit as a concrete distributive share, discussed in the second section, is reminiscent of the classical economists as well as of Marx and Veblen. The problem of classifying the economic population consistently from the point of view of the function performed and the type of income received is critical. My preferred solution of the dilemmas which arise here admittedly destroys more than it salvages of this type of profit theory. In the third section, the way in which the Clark type of profit theory may be related to the problem of aggregate income determination is briefly considered. Schumpeter's theory is cited in this context. I then consider more extensively and critically the rôle which profit as a concrete distributive share has been made to play by certain economists in the determination of aggregate income. The problem of consistency in classifying the economic population again assumes the crucial rôle in the discussion. In the concluding section, the pivotal position which the concept of the business enterprise as a decision-making unit holds in distribution and allocation theory is emphasized.

I. *Profit as an Element in Individual Incomes*

Most of us have been taught to view profit as a residue from some sort of imputation process. That is, after a business enterprise has paid for its materials, its hired laborers, the rent on its hired equipment, depreciation of its owned equipment, and the interest on its borrowed funds, a residual corresponding to accounting profit remains. But some enterprises own some or all of their income-yielding assets and in some the labor of management—and even other labor—is performed by the proprietor. We are accustomed to impute to such services a value which we treat as a cost. The second remainder we have called "pure" profit. Profit theory has consisted in the attempts to account for that residual. It was quite clear that in a static, riskless and competitive world no such residuals could exist. This was a famous feature of the models of J. B. Clark and Leon Walras. It fell to Professor Frank Knight, as Professor J. Fred Weston reminds us,[1] to point out that uncertainty is

[1] "A Generalized Uncertainty Theory of Profit," *Am. Econ. Rev.*, Vol. XL, No. 1 (March, 1950), pp. 41-42.

the necessary and sufficient condition for such residuals to occur.

Professor Weston takes the next step: since profit is the result of uncertainty and since "uncertainty results in the deviation of actual returns from expected returns," then profit should be defined as the extent of that deviation, or, as he puts it, "the difference between *ex ante* and *ex post* incomes."[2] Thus Professor Clark's refinement is now carried further and from "pure" profit is distilled an even purer profit. No breath or taint of functional return is permitted to remain. There is left purely a measure of error in forecasting. Only a part of the net revenue of the traditional diagram depicting the cost and revenue situation of the individual firm is now to be designated as profit, *viz.*, that part which is unanticipated by the enterprise itself.

It is true, of course, that as people form their anticipations of costs and revenues there may be a divergence between the anticipated total cost and the anticipated total revenue. Weston wishes to call this divergence (the anticipated net revenue) quasi-rent and the divergence between anticipated net revenue and actual or *ex post* net revenue, profit. This use of the term quasi-rent conceals the entire process of imputation. A firm's net income may be divided into two parts: the part which is imputed to those assets which the firm owns or to its market position (good will) and the part which is not so imputed. The former type of income is that which we call rent, or quasi-rent in so far as the assets involved are not specific to the firm and are mobile so that the income so imputed will tend to disappear. The unimputed part it has been customary to designate as profit.[3] Now the distinction between imputed and unimputed net income does not necessarily correspond to the distinction between net returns *ex ante* and *ex post* which Weston draws. The former distinction may, for instance, represent in part the difference between the entrepreneur's anticipations and those reflected in the market.

The firm's own market position, its managerial tradition, the morale of its employees may all be factors which, while theoretically capitalizable, are not capitalized accurately in practice or perhaps not at all until such time as the ownership of the firm changes hands. In general, a change in data which creates net revenue for a firm will be followed only after some lag by the entry of new firms or by increases in the purchases of the previous firms of assets and services necessary to take advantage of the new situation. In the process new prices will prevail for those services and those who provide them will revalue them accordingly. This admittedly vague process is what is meant by imputation.

[2] *Ibid.*, p. 46.

[3] *Cf.* Fritz Machlup, "Competition, Pliopoly and Profit," *Economica*, Vol. IX (new ser.), No. 3 (Feb., 1942), p. 20.

Change and uncertainty necessitate such lags in the process. The lags mean that there is at any given time for any given firm an unimputed net income. That unimputed net income is not necessarily unanticipated by the firm in question. Whether the term profit should continue to be used for that unimputed income or should be restricted to that part of it which is unanticipated by the management of the enterprise appears to the writer to be a matter of taste. Professor Weston appears to feel that substituting the term "unanticipated" for "unimputed" in the definition of profit will contribute to accuracy and understanding. The older usage, however, does relate the enterprise to its entire market situation and describes the revenues arising in it in terms of that situation. It takes account of the immobilities and indivisibilities of the economic world in adjusting to known changes in data as well as simple errors in forecasting on the part of individual enterprises.

Whether we speak of unimputed or, more narrowly, of unanticipated returns, it is true that we deal here with some species of economic surplus. It is improper to speak of such surpluses as constituting a distributive share. More accurately, they simply represent disequilibria in the general price system.[4] To be sure, as Professor Weston maintains, his conception of profit (and, we may add, the more general conception) gives that income no unique rôle in that system; any factor price differential which does not merely offset some non-price advantage plays the same rôle as an indicator of misallocation. In this context, of course, the notion of aggregate profit has little meaning. Profit is simply an incident in the allocation process.

II. *Profit as a Distributive Share*

For many authors the purpose of distribution theory is to explain the sharing out of the total income among social groups. For this purpose profit must be treated in some way which will give meaning to that share as an aggregate income. It is on this ground that we meet the fundamental objection to Professor Weston's view and the tradition in which he is writing. Professor Murad, for instance, in his comment on Professor Weston's article[5] insists that it is aggregate profit with which we should be primarily concerned in profit theory.

If the notion of aggregate profit is concentrated on at the outset of efforts to construct a theory of profit, that aggregate must be identified in some measurable way, *i.e.*, with some meaningful and concrete class of income recipients. Such an approach leads to the type of theory

[4] For this point see also J. A. Stockfisch, "An Uncertainty Theory of Profit: Comment," *Am. Econ. Rev.*, Vol. XLI, No. 1 (March, 1951), pp. 169-75.

[5] Anatol Murad, "An Uncertainty Theory of Profit: Comment," *Am. Econ. Rev.*, Vol. XLI, No. 1 (March, 1951), pp. 164-69.

represented by Professor Jean Marchal's recent article in this *Review*.[6] Marchal attacks in uncompromising fashion the concept of "pure profit" and the type of economic analysis in which it has been developed. Profit is any entrepreneurial income. Functional divisions within that income are irrelevant. The recipients constitute a class—those people who either own and operate their own enterprises or identify themselves with the enterprises which they do operate, *i.e.*, the group ordinarily meant by "management." This group, in Marchal's view, not only is a meaningful statistical aggregate, but functions as a class in the sociological sense and its income has meaning in that sense. "In the modern world profit has taken on a collective character, it tends to become, at least in a certain measure, a class income. . . ."[7]

Having established profit as the income of a definite social group, the origin of that income may now be discussed. Readers of Marchal's article will recall that this is not a matter of passively collecting gains of position. True, profit is the difference between what entrepreneurs receive in output markets and what they pay out in factor markets. But the important part of their activity lies in their efforts to change the structure of those markets. His illustrations include such activities as advertising, aggressive collective bargaining tactics in securing labor, promotion of inflationary fiscal policies to increase demand for products and to promote low interest rates, innovations designed to reduce demand for factors, and cartels to maintain prices of outputs.

Formally, Marchal's description may be taken as a variant of Schumpeter's theory of profit. The emphasis on entrepreneurial activity and the suggestion that such activity is perhaps the most potent force in continuously transforming the entire economic and social environment are reminiscent of Schumpeter's thought. The sort of activity suggested as typical and the emphasis upon the collective character of that activity[8] indicate, however, a more Marxist or perhaps Veblenian approach to the subject.

This type of analysis, based on defining profit as the income of a definite group of people and having its origin in the activities of that group, also presents difficulties, not less serious than those discussed in Section I. Unless we take our stand heroically with Marchal and refuse to distinguish between entrepreneurs who own property and those who don't, between those who take great risks and those who take small ones, between those who innovate and those who merely follow, between those

[6] Jean Marchal, "The Construction of a New Theory of Profit," *Am. Econ. Rev.*, Vol. XLI, No. 4 (Sept., 1951), pp. 549-65.

[7] *Ibid.*, p. 559.

[8] *E.g.*, "Efforts on the level of plant management appear insignificant beside efforts on the level of collective action." *Ibid.*, p. 559.

who manage the details of their businesses and those who delegate, we are quite likely to find ourselves peeling off segment after segment of that quite concrete sum with which we started, each segment corresponding to some function the return to which we decide to eliminate from our concept. Many theorists will leave us on the way, deciding that they have found profit, the *ding an sich,* in the return to some function which seems peculiarly entrepreneurial. Others will press relentlessly on to trace an income which cannot be imputed to any function.

The usefulness of the concept of profit as a measurable income going to a definite class in the population is so obvious that we may well tolerate considerable heterogeneity within the class as well as haziness about its outlines in order to preserve such a tool. Grouping of some sort is, after all, a necessary part of any description of the world about us. In fact it is necessary if we are to use language at all to describe that world. Thus, if at this end of our spectrum of definitions we treat the terms "entrepreneur" and "business man" as roughly equivalent and treat the entrepreneurial function as whatever it is that business men do, we can fairly easily collect statistics on the number of these men and their incomes, which incomes we may call profit. This enables us to use the data which the record-keeping activities of the world give us to investigate quantitatively the relation between profit and any economic and social changes we may think relevant and to generalize to some extent about profit-receivers or entrepreneurs as a class.

If, on the other hand, we elect to refine our analysis (change the basis of our classification system!), we find that not all business men are entrepreneurs, nor is their entire income to be designated as profit, even in the ordinary sense. Profit, in almost anyone's language, will exclude wages and interest, which means that profit-making activity will exclude the services of labor and capital. What our business man does in the economic process besides work and own property is what it is that makes him an entrepreneur and connects him with profit. Only in so far as he performs this mysterious function *is* he an entrepreneur. The services of labor and capital, broadly interpreted, include about everything that ordinarily enters the firm's production function. Functional definitions of entrepreneurship usually conclude then that enterprise is the act of changing that function. That is, of course, the essence of Schumpeter's theory as well as that developed from it by Triffin.[9] With a bit of compressing we may make room for Marchal's description here also. But changing production functions is a sporadic, even heroic, activity. It is not a continuously performed function to be associated with a continuous income. Each separate act must therefore form the

[9] Robert Triffin, *Monopolistic Competition and General Equilibrium Theory* (Harvard University Press, 1940), Chap. V.

subject of investigation when enterprise is purely functionally defined. Further, that act has significance only in relation to the whole structure and activity of the enterprise in which it is initiated, and to the change in the total equilibrium of which this firm is a part. The act must be studied in its entire *gestalt;* and the study of enterprise as one aspect of the firm viewed as a unit, functioning in the context of the entire economy, seems to be the goal to which we are led by functional theories of profit.

If we think of profit as unimputed income, then by definition the group whose activities may be held responsible for the origin of that income may be different from the group receiving it. A minimum gesture of conformity with the basic requirements outlined in the beginning paragraphs of this essay requires that a theory of profit separate the questions of the origin and appropriation of that income. But the functional theories, market imperfection theories and general uncertainty theories which I have discussed apparently fail to find an identifiable, concrete group in the population at either the originating or the receiving end of the profit flow.

The most promising approach in our search seems to be to define the entrepreneur as the business enterprise itself and profit as the enterprise's net income.[10] Instead of viewing the entrepreneur as acting through the enterprise, let us regard the enterprise as acting through its functionaries. This solution enables us to side-step many of the difficulties encountered in both functional and non-functional theories of profit. We can, for instance, discuss the relation between uncertainty and profit without forcing ourselves to the impossible task of setting up uncertainty-bearing as a fourth factor of production parallel to the traditional triumvirate. The theory now takes the form of describing how firms (planning units) react to the presence of uncertainty in their environment and how the interaction of their decisions may result in unimputed surpluses in the accounts of firms. Again, we can discuss enterprise and profit without committing ourselves to peopling the profit-making business world exclusively with Schumpeterian heroes or to defining the diverse activities of such heroes as a factor of production. Indeed, we can take in stride that diffusion of planning, coordinating and even innovating functions throughout the personnel of a modern enterprise,

[10] This reform in terminology has been skillfully advocated by J. H. Stauss in his article "The Entrepreneur: the Firm," *Jour. Pol. Econ.*, Vol. LII, No. 2 (June, 1944), pp. 112 ff. Professor Weston has objected to the solution, saying that the impossibility of locating single co-ordinating and risk-bearing groups within the firm "is not a valid basis for identifying specific functions which are performed in the process of carrying on the primary function of the institution (service creation) with the institution itself." "Enterprise and Profit," *Jour. Business*, Vol. XXII, No. 3 (July, 1949), p. 148 ff. If the view of the firm described in the text is taken, I do not feel that Professor Weston's objection should bar us from what appears to be a remarkably convenient solution of many verbal difficulties.

so graphically described by Professor R. A. Gordon.[11] We also appear to be able to analyze monopoly and its effect on profits somewhat more successfully when we treat it as an aspect of the situation or environment of the individual firm than when we try to isolate it in the economy at large as a separate element creating incomes for some hazily defined social group.

When we treat profits in terms of the relation beween business enterprises and their markets, we find that they are associated with obstacles to entry. Those obstacles may be of a type commonly described as monopolistic (or monopsonistic if in input markets) or they may be a series of favorable accidents, or a general impression of a high degree of uncertainty prevalent in the given industry or a rate of development in organization and technique which more than keeps step with investment in the industry. Many authors describe all of these factors as monopolistic in character, but it seems preferable to distinguish them from such factors as good will, patents, cartel agreements, intimidation, unique access to input markets, or other circumstances whereby firms may consciously control the output of their industries and the number of firms in them.

III. *Profit Theory and Macroeconomic Problems*

The most persistent criticism of the profit theory which associates profit with disequilibrium in the relations between firms and their markets is that this theory, like the rest of "orthodox" value and distribution theory, is oriented to the problem of allocation. It seems to provide no bridge to the macroeconomic problem of aggregate income and aggregate distributive shares. To be sure, aggregate profits can always be found by summing the profits of individual firms, however these may be defined. In general, however, if we simply take profits as the unplanned surpluses and deficits due to immobility in a dynamic world, there seems little reason to attach significance to the aggregate. If we think, moreover, of profit as due to restricted entry, we can understand profits for the individual enterprise in a particular industry but we are not quite so sure what happens when this situation is assumed to be generalized for the economy. In any case net incomes of firms have a habit of swelling and contracting more or less periodically and of doing so in conjunction with similar swellings and contractions in employment and in total income. The theories of profit as I have discussed them thus far do not explain why this is the case.

A. *Schumpeter's Approach*

Professor Schumpeter's theory of profit and entrepreneurial behavior

[11] *Business Leadership in the Large Corporation* (Washington, D.C., Brookings Institution, 1945).

comes to mind as an attempt to relate profit theory to the question of stability—one of the chief objects of study in macroeconomic analysis. The macroeconomic theory in Schumpeter's analysis is, however, essentially that of J. B. Clark. Total income is still pretty much dependent upon the available supply of productive agents and the technical coefficients of production. Distribution is a question of imputation based on marginal value productivity. Agents are allocated on the basis of equimarginal returns in all markets. Innovations—which tend to come in waves—may shift the aggregate real income upward in so far as the new production functions have more favorable output-to-input ratios than the old ones. They may involve monetary inflation if financed with new bank credit. They also involve aberrations of the distribution pattern—entrepreneurial pure profits—due to lags in market adjustments. Those adjustments and the necessary reallocation of resources among firms and industries are likely to be accompanied by monetary deflation and by slumps in aggregate real income due to the temporary unemployment of all sorts of resources incident to this reallocation. In general, however, Schumpeter accepts the basic assumption of neo-classical distribution theory that the solution of the "dividing-up" problem affects the production problem (problem of aggregate real income determination) only in so far as the remuneration of the various productive agents affects their supply.

B. *Quasi-Keynesian Approaches*

A quite different approach to the relation of profit theory to the macroeconomic world must now claim our attention. That approach involves the derivation of the theories of both production and distribution as corollaries from the macroeconomic identity, total income equals total expenditure.[12] One procedure is to assume that wage-earners do not save and to deduct their earnings and expenditures from both sides of the identity. This leaves us with the incomes of entrepreneurs and property-owners equal to their investment plus their consumption. We may concentrate first on investment. Investment means accumulation of assets. The possibility of accumulating profit-yielding assets indefinitely is usually regarded as limited. The rate of return on those assets is assumed to fall. When that rate falls below the rate assumed necessary to undertake the risk of holding assets in illiquid form, entrepreneurs

[12] It is sometimes claimed that this type of theory is the only one which may be properly described as macroeconomic. *E.g.*, Professor K. E. Boulding writes, "The 'classical' theories of distribution—including the marginal productivity theory—are all essentially 'microeconomic' in character; and while they can throw a great deal of light on the forces that operate in particular markets, they do not enable us to solve the more fundamental problem of the distribution of the product as a whole." *Economic Analysis* (New York, Harper and Brothers, 1948), p. 849. See also his *A Reconstruction of Economics* (New York, John Wiley and Sons, 1950), pp. 244-46.

attempt to decumulate and consequently each side of the income-expenditure identity contracts. If we assume no accumulation, of course the income of property owners and entrepreneurs must equal their consumption. The conclusions seem to be: (1) the maintenance of total income depends primarily upon firms' decisions about the disposal of their net income; (2) investment results in falling rates of profit; (3) disbursement of net income as dividends and the consumption of these dividends by their recipients maintain the rate of profit.

1. *Kalecki's Theory*. It should be noted that the mere statement that gross profit equals non-wage-earners' investment plus consumption does not in itself account for the aggregate wage bill nor hence for the aggregate income. Keynes' solution of the problem of determination of aggregate income is well known; we may note that it does not necessarily depend upon the relative distributive shares of the various segments of the economic population. Dr. Michal Kalecki, on the other hand, approaches this problem by using the relative distributive shares as the link between profits (determined by "capitalists'," decisions as to their consumption and investment) and aggregate income. This means that the theory of relative distributive shares has to be developed independently. Kalecki does this in the context of his theory of price determination by the individual firm.[13]

The analysis begins by showing the price of any item to be made up of entrepreneurial income per unit of the product plus unit overhead cost plus unit wage cost plus unit raw materials cost. The marginal cost is the sum of the short-period marginal cost of overhead, wages and raw materials. It is assumed that unit raw materials costs are practically constant with respect to output; that marginal overhead costs are insignificant in relation to total overheads; and that the difference between average wage costs and marginal wage costs is negligible. Prices and costs are each aggregated. Given these assumptions, we find that the total value of the output minus marginal costs equals entrepreneurial income plus overhead costs. If we divide both sides of this equation by the total value of output (which Kalecki calls "turnover"), this means that "the relative share of gross capitalist income and salaries in the aggregate turnover is with great approximation equal to the average degree of monopoly."[14] This follows, of course, the Lerner definition of monopoly as the ratio of the difference between price and marginal cost to price.

Now we appear to have here a most significant conclusion and it is

[13] Michal Kalecki, *Essays in the Theory of Economic Fluctuations* (New York, Farrar and Rinehart, 1939), Chap. I, "The Distribution of the National Income," pp. 13-41; *Studies in Economic Dynamics* (New York, Farrar and Rinehart, 1944), Chap. I, "Costs and Prices," pp. 9-31 and Chap. III, "A Theory of Profits," pp. 47-58.

[14] *Essays in the Theory of Economic Fluctuations*, p. 21.

one which Dr. Kalecki takes very seriously indeed. In the conclusion of his essay, for instance, he refers to "a world in which the degree of monopoly determines the distribution of the national income" as a situation completely demonstrated and applying to "the real world." Certain questions therefore become both pertinent and important.

First, is the degree of monopoly (equals average percentage gross profit margins) independent of the wage level? This independence is necessary, of course, if the degree of monopoly taken in conjunction with the level of profits is to determine the aggregate income and with it the total wage bill. Certainly the definition of monopoly employed here implies that for any firm which takes its average revenue curve as a datum the degree of monopoly depends upon the position of the marginal cost curve. An absolute monopolist might be confronted with increased wage costs and the degree of monopoly would thereby be lessened. Likewise, if we assumed monopolistic competition with free entry, a change in any firm's marginal cost not duplicated by that of other firms would not change the position of its revenue curve and would hence alter the degree of monopoly. This point is granted by Kalecki in his later article on the subject.[15] He views the typical market organization, however, as one of oligopoly. "The firms fix the prices of their products, taking into consideration the mobility of customers . . . and the influence of their own prices on those of their rivals. . . . Each firm is satisfied that the price fixed is more advantageous than a higher or lower level."[16] He then shows that if marginal costs for all fall in equal proportion, the new most profitable prices for all fall and do so until the average percentage gross profit margin returns to its original position. The other qualification is that firms do not work up to capacity. If there are bottlenecks, the profit margins will increase and Kalecki indicates that this occurs outside any change in the degree of oligopoly. The important point is that the factor which is supposed to give the relative distributive shares must not depend upon the wage level and this independence rests upon universal pricing policy of the sort associated with a particular set of assumptions regarding behavior in certain types of oligopolistic markets.

A second, and fundamental, question is whether the Lerner definition of the degree of monopoly is an empirically useful concept when applied to the whole economy in the way in which Kalecki applies it. If we are to test the proposition that the degree of monopoly "determines" the distribution of income, we must have some workable measure of the degree of monopoly for the system which is statistically independent of our measures of the aggregate income shares. Other-

[15] *Studies in Economic Dynamics*, pp. 12-13.

[16] *Ibid.*, p. 10.

wise, of course, any propositions which we make about the relationship between them are circular. Kalecki asks that it be assumed that wages and raw materials costs comprise practically the whole of marginal costs in both the short and long period and that these costs per unit are constant and linear for all firms. Wage and raw material costs are given; the prices are given; the difference divided by price is defined as the degree of monopoly. When these quantities are aggregated, the degree of monopoly for the economy is again defined as the difference between aggregate income and wage-and-materials cost divided by aggregate income. With this definition we are hardly surprised to learn that we have discovered a remarkably close relationship between the degree of monopoly and the ratio of gross entrepreneurial (or "capitalist," as Kalecki calls it) income to total income! But it is no more correct to say, as Kalecki does, that the degree of monopoly determines this ratio than to say that the ratio determines the degree of monopoly. We have simply defined them to be identical. An empirically significant causal connection between the degree of monopoly and distribution must wait upon some workable measure of monopoly which will take explicit account of the organization of industry, the extent to which firms produce nonperfect substitutes for one another's products, the extent of collusion, the degree of mobility of firms between industries, and obstacles to entry generally.

A third question concerns the appropriateness of lumping together fixed costs and net entrepreneurial income in any context other than short-run price determination for the individual firm. In any discussion in which it is assumed possible for firms to enter or leave an industry the distinction between these shares is critical. Once the number of firms is admitted as a variable, the percentage gross profit markup which is most profitable, even in Kalecki's scheme, depends upon the number of firms. This in turn will depend upon the fixed as well as prime costs which prevail in relation to demand schedules, and not merely upon the degree of market imperfection as Kalecki indicates. The level of fixed costs in relation to prime costs depends upon such factors as capital intensity, changes in consumption habits toward or away from products of industries of heavy fixed costs—in short, on any number of factors quite apart from the imperfection of the market. True, a secular increase in the proportion of fixed costs to gross income may accompany a decrease in net (percentage) returns to capital investment over the same period, giving the impression of remarkable stability of the gross entrepreneurial profit margin—changes in which may be associated plausibly with drift toward or away from market imperfection.[17] But

[17] *Ibid.*, pp. 22-24. The argument in the text concerning the relation between capital intensity and the degree of monopoly is suggested by Mr. Roswell H. Whitman in his

equally convincing explanations may be given on quite other lines, *e.g.*, the traditional marginal productivity explanation.

For short-run pricing (profit-maximizing) policy of the individual firm, the distinction between net income and fixed costs may be irrelevant. Gross entrepreneurial income as Kalecki defines it may be independent of this distinction in this case. For long-run price-determination in an industry with a variable number of firms, the distinction between variable and fixed costs becomes arbitrary. Given any degree of long-run mobility, there is no significant difference in the method whereby wages of piece workers (for instance) and that part of gross entrepreneurial income designated as fixed costs are determined. Only that part of income not imputable as a cost (effective resistance to continuance of production) can be determined residually in this case. It is the distinction between net income in this sense and the total of those incomes which may be treated as costs which is relevant for profit theory and which can be associated with market imperfection.

Lastly, we must ask whether Kalecki's theory rests upon a classification of the economic population which is significant and consistent. Kalecki's model assumes that the category wages coincides with the income of that group in the population which makes (or can make) no

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"Note on The Concept of Degree of Monopoly," *Econ. Jour.*, Vol. LI (June-Sept. 1941), pp. 261-69. Mr. Whitman, however, tries to prove his point by showing that if two firms having the same "degree of monopoly" (using Kalecki's definition) had different ratios of capital to sales, the rates of return on the respective capitals invested would have to be different. This is, of course, inconsistent with long-run equilibrium, as Kalecki agrees in his reply ("Mr. Whitman on the Concept of 'Degree of Monopoly'—A Comment." *Econ. Jour.*, Vol. LII (April, 1942), pp. 121-27.) Kalecki claims that this does not prove "the absurdity" of his (Kalecki's) conclusion. Firms would enter the abnormally profitable industry until the rate of return on capital fell to the equilibrium level; if the degree of monopoly were to remain the same, this would mean that the effect of entry would be simply to pile up excess capacity, with no reduction in prices (if prime costs remained the same) or increase in sales (which could not presumably be increased without decreases in prices). But it is necessary to Kalecki's position in this case that the degree of monopoly remain the same. Otherwise, changes in the production techniques and consequent degrees of capital intensity in industry would be permitted to assume the causal rôle in long-run distribution. It may be quite possible to construct a model of oligopolistic pricing which would fit the conditions necessary for Kalecki's theory. But that the real world corresponds to this model is not proved by the stability of the ratio of overheads plus profits to sales over a period of two decades as Kalecki tries to show both in the Comment just mentioned (*loc. cit.* p. 124) and in the *Essays* cited at the beginning of footnote 13. As suggested in the text, a decrease in the rate of return to capital with its accumulation can be just as satisfactorily accounted for in terms of the traditional marginal productivity theory—or some more sophisticated modern version; the increasing proportion of overhead to prime costs can be accounted for as the result of technological changes and changes in the pattern of consumer demands. The fact that these two trends seem to have offset each other tells nothing about whether the economy has become more or less competitive. The "degree of monopoly" in the economy as a whole at any time can be interpreted simply as a statistical summary of all the developments which have made prices and different categories of costs what they are at that time. It seems to have rather little to do with monopoly.

decisions concerning the disposition of its income. Wages are entirely consumed; their amount depends upon the decisions concerning expenditure made by other groups. The non-wage-earners, on the other hand, are assumed to decide for themselves the volume of their expenditures and the distribution of those expenditures between investment and consumption. These decisions determine their income. When we move into his theory of the firm, we find that our wage classification must now correspond (along with materials costs, which in turn must be subdivided into wages and other costs) to entrepreneurial prime costs while our "capitalist" income turns out to be everything that is not prime cost. We conclude from these definitions that a wage-earner can graduate from the status of laborer to capitalist in Kalecki's model by (1) deciding to save part of his income or by (2) shifting his job from the department of operation in the factory in which he works (where his wages are prime costs) to the department of maintenance (where his wages are part of "gross entrepreneurial income"), all depending upon which chapter in Dr. Kalecki's book our wage-earner reads. But the implied conclusion of Kalecki's analysis—that we have a simple multiplier (equal to the reciprocal of the degree of monopoly) between aggregate entrepreneurial income and total income—depends upon saying that these two acts of our wage-earner amount to the same thing!

2. *Boulding's Theory.* The other contribution to macroeconomic theories of distribution which we propose to study here is that developed by Professor Boulding in his *Reconstruction of Economics.*[18] Again, the total income is divided into two categories, wages and profit. The participants whose decisions determine the aggregate size and shares of this income are classified as firms and households. The whole income is received by households; wages are for personal services sold to firms, and profits are the difference between total wages and total income. They take the form of interest, dividends and increases in households' equities in firms. Property appears to be held and administered by firms so that all income from it is conceived as accruing to firms and thus indirectly to households in accordance with their equities in firms. The assets exchanged take the form of goods, debts and money.

Expressions for profits and wages are derived from changes in the balance sheet identities constructed for firms and households. In a closed system with no change in money supply the total net product, which equals profit plus wages, must equal household consumption plus household accumulation of goods plus business accumulation of goods. It follows that all other items which are added to or deducted from

[18] See Note 12. The discussion in the text is based upon Chapter XIV, pp. 243-69.

balance sheets during the period are transfer items. Boulding groups them to appear as positive in his definition of profit and negative in his definition of wages; the transfer factor is the increase of money assets of business (equals decrease in money assets of households) plus increase in debts from households to businesses minus increase in debts from businesses to households plus business distributions in interest and dividends. Profits are then the increase in business real assets plus the transfer factor. Wages are household consumption plus increase in household real assets minus the transfer factor.

The above identities and varying assumptions about household and business behavior yield various models showing possible equilibrium outputs and distributive shares in the economic system. Boulding elaborates two of these. In the first case, consumption plus household accumulation are an increasing function of the proportion of wages to the total income, while investment (business accumulation) is a decreasing function of the proportion. If the items composing the transfer factor are independent of the division of the total income, the transfer factor will determine the entire system. Thus, to any given distribution there corresponds a given level of investment and of consumption and hence total income. The investment plus the transfer factor gives us profit; the remainder of the income is wages. For any income distribution, then, there must be a unique value of the transfer factor which makes the identity, income equals household absorption plus business investment, consistent with the identity income equals wages plus profit. If that transfer factor is given from outside the system, the whole model is determined. It follows that the independence of the transfer factor is critical. Considering the items making up this factor, it will be noted that the increase in business money assets is a matter of the relative liquidity preferences of businesses and households. In the long run this factor must be zero. The increase in household indebtedness to business, Boulding suggests, is probably independent of the distribution. (It seems to be a matter of changes in the relation between prevailing consumption levels and the absolute level of income.) Business indebtedness to households is a matter of sales of securities to households; this may be an increasing function of profit. Business distribution may be partly contractual, but in general it appears to be an increasing function of profit also. If the first two terms of the transfer factor are zero, if all business investment is financed by sales of securities and if all profits are distributed, the transfer factor has, as Boulding points out,[19] completely lost its independence (it simply equals profit minus investment, which have to be determined elsewhere) and the system is indeterminate.

[19] *Reconstruction of Economics*, p. 261.

In Boulding's second case, household consumption and accumulation depend on the absolute level of income (rather than on wage-earners' proportionate share) and investment depends on the level of profit. Again, the transfer factor is assumed to be independent of output. To any level of income, then, there corresponds a given level of consumption (household absorption). Deducting the transfer factor from this gives us the wage level; the difference between this and the income level is profit. Investment is a function of profit. Income shifts until planned investment plus planned consumption are equal to wages plus profit. The transfer factor determines the system.

The significance of the theory just summarized depends, like that of theories discussed earlier, on the relevance of the classifications employed in its foundation. The division of the population into firms and households accords with the approach advocated in the present article. Emphasis on that array of institutional facts summarized by the term "managerial revolution" dictates the separation of firms and households as decision-makers. Recognition of the firm as an independent decision-maker, acting through its agents who are presumed to function in the interests of the firm indicates as relevant the classification of income shares into those which are disposed of by firms and those which are disposed of by households. This, of course, does not correspond to the wage-profit dichotomy which Boulding discusses. He states in establishing this division: "The distribution of non-labor income between contractual income (interest and rent) and residual income(profits) at any one time is historically determined by the nature and extent of the contractual obligations, and does not present many serious theoretical problems. The distribution of total income between labor income (wages) and non-labor income, which we may call 'gross profits' (the Marxian 'surplus value'), is a theoretical problem of first magnitude."[20]

It may be true that for most macroeconomic purposes one may reject as irrelevant the distinction between contractual and residual income. But this same distinction can be made between categories of personal services as well as between these and property services of various sorts. In any case, the statement that the distinction between rent or interest and profit is irrelevant does not in itself tell us why the distinction between wages and these incomes *is* relevant or important. For this answer we must inspect the models of distribution which Boulding outlines. We now see that the whole structure rests on the fact that wage-earners are presumed to have different consumption, investment and liquidity preference functions from those of profit-recipients. If these functions are the same for both groups, no connection can be traced between changes in distributive shares and changes in these functions and the macro-

[20] *Ibid.*, p. 246.

economic variables of employment and income which they determine. The bridge between distribution theory and aggregative economics dissolves.[21]

Once this point is grasped we see that the division of the population into wage-earners and others is no more significant than any other division into groups with equally different consumption, investment, and liquidity preference functions. Indeed, in the light of currently held views concerning the nature of these functions, macroeconomic theories of distribution between people with large and with small incomes, between people with large and with small volumes of assets, or between people with high and with low ratios of liquid to other assets might be more relevant than distribution between wages and gross profit to the problem of connecting distribution with the size and stability of aggregate output and employment and other questions with which macroeconomic theories are concerned. Discussion of distribution theory in these terms alone, however, is incomplete. Somehow, the theory must be related to the organization of the economy in the real world. Grouping of the population by distributive shares must correspond to groups in the population whom we observe to make decisions in significantly different circumstances. The division into laborers and capitalists—or the corresponding division of income into wages and profits—has been (when not used for purely demagogic reasons) an attempt to meet this demand. The supplanting of the classical capitalist-entrepreneur by the impersonal, professionally managed business enterprise as the dominant characteristic of our industrial organization has outmoded the sociological as well as economic relevance of this classification. As pointed out above,[22] Boulding's classification of the economic population as firms and households is the one related to this state of affairs. The really significant sets of circumstances in which decisions are made are those in which people make them as agents of firms and those in which they make them as heads or agents of households.

The theory of distribution should be worked out consistently on the basis of the division between firms and households. Boulding's model might be amended to suit this requirement. Wages as well as interest and dividends in the income distributed by firms must now be included. This distribution item then becomes the income disposed of by households. Undistributed income is the income disposed of by firms. Again

[21] *Cf.* a remark made by Thomas C. Schelling in developing a similar but simpler model of macroeconomic distribution: "It should be remarked at the outset that there is no purpose in this distinction between wage income and profit income unless the incremental ratios s and sigma [the ratios respectively of taxes to wages and profit] or the incremental ratios b and beta [the ratios of consumption to wages and profit, respectively] are expected to differ from each other." *National Income Behavior* (New York, McGraw-Hill, 1951), p. 108.

[22] See above, p. 260.

the total income equals household consumption plus household accumulation of real assets plus business accumulation of real assets. Distributed income is equal to household consumption plus accumulation minus a transfer factor; undistributed income is equal to business accumulation plus a transfer factor. The transfer factor now turns out to be the increase in money assets of business plus the increase in debts from households to businesses minus the increase in debts from businesses to households. This is the same transfer factor which appears in Boulding's original model except for the business distribution item. The rest of the distribution model could be worked out in a fashion similar to that described in Boulding's suggested models. Total household absorption might be taken as an increasing function of distributed income, business accumulation as an increasing function of undistributed income. The transfer factor and its independence can be made to play a similar rôle in the amended model. If the latter is given, there is, again, only one division between distributed and undistributed income consistent with the equality of the total income generated and its total planned absorption.

It is important to note that the division of income which we found revelant in connecting the theory of the firm with the more commonly discussed macroeconomic variables is not necessarily that discussed earlier as coming out of the traditional profit theory. The latter division was between costs and net income, between income imputed to factors employed and/or owned by firms and incomes not so imputed. A part of net income in this sense may very well be distributed, not only as dividends but as extraordinarily high salaries, bonuses, liberal expense accounts to management and other employees.

Whether anything interesting can be said of the connection between pure profit and macroeconomic problems depends upon (1) firms' distribution of their unimputed net income as compared with their distribution of income arising from owned assets; (2) firms' propensities to invest and to hoard out of undistributed net income as compared with their propensities to invest and hoard from undistributed income from owned assets; (3) significant differences between households' propensities to consume, invest and hoard when their relations with particular firms make their disposable incomes larger or smaller than those indicated by the normal market value of the services which they sell; (4) the effect of changes in the book value of households' assets (brought about by undistributed incomes of firms) upon their propensities to consume, invest and hoard.

Conclusion

We may now summarize our observations as they affect the three main areas of profit theory which it was earlier proposed to discuss—

(1) efforts to refine further the concept of profit as an element in individual incomes; (2) efforts to define profit as the income of a definable class in the social and economic population; (3) efforts to relate the concept of profit as a distributive share to macroeconomics.

Discussion of the first area leads us to consider the whole process of imputation and the rôle of the business enterprise in that process. We find the origin of profit in the relation of those enterprises to the input and output markets in which they operate. Its distribution is a second problem and depends upon the structure of the firm, and the political relationships among the parties comprising it. The power of any group or individual in this context, again, turns out to be a matter of the individual's or group's success in isolating potential competitors from the firm dealt with.

Investigation of the second area reveals that the performance of anything ordinarily thought of as a profit-engendering function is diffused through a large number of individuals and classes of contractors in the modern business enterprise. The same diffusion is characteristic of the recipients of firms' net incomes. In consequence, it is virtually impossible to identify a distinct profit-receiving class in the population. There is meaning, as Schumpeter has shown us, and as Marchal uses it, in the concept of an entrepreneurial class composed of those who identify themselves and their interests with those of the firms for whom they work. The personal incomes of these people do not, however, coincide with profits in any sense in which that term is ordinarily used. Rather, both in accordance with the economic problems in which the concept is used and in accordance with everyday usage, profit is to be associated with firms' income rather than with any group of personal incomes.

In discussing the third area we note that the use of the concept of profit as a class income or distributive share is especially prevalent in attempts to relate distribution theory with the "new" macroeconomics. Here the term is ordinarily used to describe all income not received by labor (sometimes manual, usually undefined). This entirely arbitrary —although traditional—classification of the economic population is particularly misleading in dealing with macroeconomic problems because, as we have seen, it cuts across and obscures classifications of the population which are more relevant to those problems. Furthermore, it conceals the independent rôle of the business enterprise in the economic process, both in the matter of determination and (the still important matter of) allocation of the total output. After all, it is firms' decisions about the structure of their assets, the extent to which they insist upon being more or less liquid, which may be the most important factor governing changes in total money income, employment and output. It is firms' decisions concerning retention *vs.* distribution of net income which apparently govern largely the rate of capital formation

and with it the rate of return on capital and the division of income between property-owners and sellers of personal services (for such purposes as we may be interested in that division). But if there is mobility of sellers of personal and property services among firms, we inevitably find ourselves with some variant of the marginal productivity theory required to determine the allocation of those services to the firms in question. Further, we require some measure of the tension between the pattern of allocation of existing productive services and their rewards which is consistent with decisions of consumers and investors on the one hand and the pattern of those variables which actually exists on the other. The concept of pure profit has been developed as a measure of that tension. Theorists who attempt to describe the movement of the system between successive states of equilibrium can ill afford to divest themselves of this tool.

THE ROBERTSONIAN EVOLUTION

By William Fellner*

I. *The Triad*

Dennis Holme Robertson first published *A Study of Industrial Fluctuation* in 1915, *Money* in 1922, and *Banking Policy and the Price Level* in 1926.[1] Recently these volumes were reprinted,[2] all three with new introductions and *Money* also with two new chapters. To the *Study* the London School appended an article by Marcel Labordère, with an introduction by Professor Robertson.[3]

The sequence in which these works were first published expresses a gradual broadening of Robertson's approach. In the *Study* we find detailed historical discussion and theoretical analysis of basic dynamic forces such as inventions, the durability and indivisibility of real capital, gestation periods, good and bad harvests, but we find comparatively little monetary analysis; *Money* contains a classic treatment of the essential influence (non-neutrality) of monetary phenomena; and *Banking Policy* is unmistakably rooted in the two previous works. A reader knows more about Robertson's views on money and employment if he has studied *Banking Policy* and, in addition, some of the author's newer contributions, perhaps mainly those reprinted in his *Essays in Monetary Theory*,[4] than if he substitutes one of the earlier volumes for

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[1] The writer of this article expresses his thanks to Professors Norman S. Buchanan, Howard S. Ellis and Lloyd G. Reynolds for valuable suggestions.

[2] The first by the London School of Economics in 1948; the second by Nisbet and Co., London, at the Cambridge University Press, in the Handbooks series now under the editorship of Mr. C. W. Guillebaud; the third by Augustus M. Kelley (New York) and Staples Press (London) in 1949.

[3] M. Labordère was not a professional economist. He seems to have impressed both Professor Robertson and Lord Keynes with his insight and imagination. (Robertson tells us of Labordère, that "he lived in Paris and that he owned some small farms in the Jura. . . . By the time I knew him he was a very strange but very likeable old man, rather deaf and with a long white beard, much absorbed in a religion strangely compounded of Buddhism and Islam. . . .") The article in question was originally published in the *Revue de Paris* in 1908 and it presented in allegoric form an "overinvestment" interpretation of the American crisis of 1907, making it clear that the basic structure of such an argument can be expressed in non-monetary terms, and moving from there to the monetary level. Two sentences which are characteristic of the views expressed in the article: "la crise est venue parce qu'on a voulu faire trop vite trop de chose à la fois," and "nous plaçons nos économies avant de les avoir faites."

[4] Such as, for example, "Saving and Hoarding," reprinted from the 1933 volume of

Banking Policy. But acquaintance with the earlier volumes makes it much easier to comprehend the highly concise treatment in the hundred pages of which *Banking Policy* consists. In the present article the reader will find merely a sketchy summary, most of it in Sections III and VI.

Twenty-five years have elapsed since the original publication of the last of these three books. The publishers who have decided to issue the new editions have rightly implied that there exists continued interest in the triad. However, "interest" when used in such a context is a colorless phrase. There are many ways in which works of the nineteen-twenties can still be "interesting" to the "interested" reader. Much has happened in the world since that time, and much has happened in economics. The economics of money and the level of employment (level of business activity) with which we will be here mainly concerned has gone through its Keynesian and immediate post-Keynesian period, and the product which emerged after many years of heated controversy is different in essential respects from that which existed before. What makes a specific contribution of the preceding era significant enough to justify the contemporary theorist's interest in studying it in the original? Has it not all been absorbed by more recent currents? Is it not "merely" the historian of doctrine in us who turns to these books? After all, what educated person is completely disinterested in the antecedents of the work in which he tries to participate? Is this all?

This in itself would not be as little as it can be made to sound. But it is *not* all. After so many years, a surprisingly small part of Robertson's early contribution is outmoded in the sense that a problem with which it is concerned seems to have lost its significance, or in the sense that a statement is clearly less adequate than later statements of other authors on the same subject. More frequently will the reader encounter analysis which will strike him as a point of departure toward those constituents of the subsequent New Economics which presumably have come to stay. In a good many instances he will wonder what other paths, besides those which were opened up in the 'thirties and the 'forties, could be made to originate in Robertsonian analysis. Such speculations are essentially forward-looking. They should prove more fruitful than attempts to rank and grade the great contributions of recent decades.

The Economic Journal; "Industrial Fluctuation and the Rate of Interest," from the 1934 volume of *The Economic Journal;* "A Survey of Modern Monetary Controversy," from the 1938 volume of *The Manchester School* (reprinted *also* in American Economic Association, *Readings in Business Cycle Theory*); "Mr. Keynes and the Rate of Interest," from the 1938 volume of *The Economic Journal* (reprinted *also* in American Economic Association, *Readings in the Theory of Income Distribution*).

II. *Robertson and the New Economics*

Shortly after the first impact of Keynes' *General Theory* was felt, Keynesianism started acquiring at least two different meanings. There were those who saw the essence of the doctrine in the theory of stagnation. There were others who believed that the fundamental Keynesian contribution was to develop a new apparatus which focuses attention on the inability of the market mechanism continuously to equate voluntary savings to investment at a satisfactory level of employment. In the second of these two interpretations the words "to develop a new apparatus" deserve all the emphasis that can be placed on them. The apparatus did indeed have many novel features. The notion that the market mechanism fails automatically to resolve the problem of effective demand was of course not new. Nor was the interest in compensatory central-bank and government policies, including public works programs.

To some of the best minds of the preceding decades the problem of effective demand had posed itself as a problem of outstanding significance; and, especially from the second half of the nineteen-twenties on, most then "modern" economists came to believe that fruitful analysis of effective demand requires connecting the problem with the relationship between saving and investing. The Keynes of the late nineteen-twenties—that is to say, Keynes up to about his fiftieth year, and particularly *in* the fifth decade of his life—should be classed among a group of economists who were developing the savings-investment framework with the intention of making it increasingly applicable to effective-demand analysis. The Keynes of the late 'twenties did this with great brilliance and originality but he did it in a tradition which by then had become well established. The tradition was of mixed origin, certainly of Swedish as well as of British, even though the Swedish (Wicksellian) influence came down to him very indirectly. Keynes' *Treatise on Money,* his first major contribution to this kind of theory, was published in 1930, four years after Robertson's *Banking Policy and the Price Level.*

In the *General Theory* Keynes made his readers feel that he had broken away from the established tradition. He truly did, if it was his intention to provide a point of departure for the doctrine of chronic stagnation. He did not if he meant to develop a theory which was useful for a general analysis of discrepancies between full-employment equilibrium and deficient-or-excessive effective demand. Even in this case he contributed a great deal that is of lasting significance. But in this case there was no Keynesian Revolution. There merely was evolutionary progress along Wicksellian-Robertsonian-Keynesian lines; and the heritage of the next generation will be just as essentially Robertsonian

and Swedish as Keynesian, regardless of what they will choose to call it.

The present writer feels uncertain as to whether this interpretation of Keynes is more or less adequate than the stagnationist (more genuinely "revolutionary") interpretation. It is probable that the truth is somewhere in the middle. Keynes, I think, must have intended to make additions to the House in general, not merely to enlarge and furnish its stagnationist corner and to tear down the rest. But he was particularly interested in the stagnationist corner and he tried to make it stand out more prominently than the other parts of the House. At any rate, regardless of what his intentions were, this is what he actually accomplished. Furthermore, the great influence of the *General Theory* is largely a consequence of the fact that it is easy to "correct" the Keynesian structure in such a way as to reduce the prominence of the stagnationist corner. I do not mean to imply that at present the long-run validity of the stagnation thesis can be disproved or proved. Nor is it clear at all that stagnant tendencies, *if* they should become predominant under mature capitalism, will properly be interpreted along Keynesian lines rather than along those developed by Schumpeter in his *Capitalism, Socialism and Democracy*. It is merely suggested here that in the present era of economic history few persons would be interested in a theory which is unequivocally built around the central theme of deflationary tendencies and of stagnation. In fact, many are interested in the Keynesian theory and rightly so. This is because something does remain of it even after the stagnationist corner has been reduced to proper dimensions.

The remainder is, of course, not *identical* with the Robertsonian structure. The specifically Keynesian contribution stays significant in whatever way we look at it. On the other hand, Keynesian economics left unexploited much that was significant in the Robertsonian and other pre-Keynesian contributions. Evolutionary progress then requires adding parts of the Keynesian achievement onto the structure which by the end of the nineteen-twenties had reached an impressive height; and it requires also an interest in developing the neglected elements of the pre-Keynesian monetary economics. The structure, in its pre-Keynesian stage, was by no means exclusively of Robertson's making. But Robertson played a significant rôle in erecting it.

III. *Robertsonian Economics and the Basic Elements of the Keynesian Apparatus*

Robertsonian theory is dynamic in that it depicts a *process* of economic development. Furthermore, it does not assume that this process satisfies the conditions of moving equilibrium. In contrast, the formal

apparatus of the *General Theory* treats the determinants of aggregate output and employment for a single time-interval during which the system reaches a state of equilibrium, with the result that if the economic process (which is not described by the formal apparatus) consisted of continuous movements from one such condition to the next, then the observed path could be considered one of moving (or dynamic) equilibrium. To be sure, verbally or informally, Keynes did express significant views about the process itself, and also about what the shape of the equilibrium-determining functions is likely to be during time-intervals which he expected to become typical under mature capitalism. If we emphasize this "informal" part of the story, then we direct our attention to the forecast that we are moving toward a chronic insufficiency of effective demand, presumably with qualifications relating to hot and to cold wars and the like. The apparatus itself is more general. It shows that effective demand *may* be too small to make the equilibrium conditions compatible with full employment; or that it *may* be just sufficient for accomplishing this; or that it *may* be too great for accomplishing it at stable prices. The Keynesian apparatus establishes this result by looking at the economy during a time-interval through which it passes in the course of a process. Post-Keynesian economists who wished to place the apparatus back into the context of a process had to reintroduce links between periods, in the Robertsonian or in some alternative fashion (*e.g.*, in the Neo-Wicksellian). Here moving equilibrium becomes merely a special case.

In the Robertsonian schema, savings are defined as the difference between the income earned in the recent past—*i.e.*, in the preceding short period—and the consumption expenditure of the present period. Hence, movements in money income can be expressed in terms of the relationship between investment (I) and savings (S). $I>S$ means rising money income, $S>I$ means falling money income, and $S=I$ means that money income remains unchanged. Such a schema implies a relationship in the nature of the "consumption function," since consumption expenditure is related to disposable income (which here is defined as income previously earned) but the Robertsonian analysis allows for further causal factors which influence the saving-ratio out of disposable income. The size of cash balances, the rate of interest, and relative prices belong among these factors, although they do not exhaust the list.

In the Robertsonian system the relationship of investment to saving may be said to determine the movements in money income, but it is possible to explain these movements alternatively in terms of quantity equations. These may be either of the transactions or the cash balance type. An excess of investment over saving, that is, a rise in money

income, must for example be accompanied by a rise in the stock of money and/or a rise in its income velocity, *i.e.*, either by a rise in the money stock or by a fall in liquidity ratios which are reciprocals of velocities. At any rate, once we are faced with a change (say, with a rise) in money income, the quantity theory framework provides a convenient point of departure for a discussion of the question of how much of this change will show as a change in real output and how much as a change in prices. Such a discussion leads ultimately into the problem of supply elasticities. These, in addition to the monetary savings-investment relations, must be known for translating the movements of monetary aggregates into movements in real output and employment.

While saving takes place "out of" disposable income, trends in investment are explained mainly by technological and organizational progress and other structural changes which influence the composition of output as well as its aggregate size. The long-run inducement to invest is interpreted as emanating from specific sectors of the economy and emphasis is placed on the fact that changes in the structure of costs and demands affect the size of aggregate demand and output. Technological improvement is presumably the most significant but not the only secular (long-run) factor which, by way of its direct effect on specific industries, gives rise to changes in aggregate output. In a more detailed discussion of the investment process it is then stressed that indivisibilities, the acceleration-principle mechanism, and the existence of gestation periods (production-lags) complicate the outcome considerably. In other words, "cyclical" considerations are worked into the investment discussion which is largely rooted in the analysis of long-run factors.

So far we have encountered in the Robertsonian system two determinants of aggregate output which may be said to "correspond" to Keynesian determinants, namely, the income-consumption relationship, and the rate of return on investment (marginal efficiency). In addition, attention has been called to several Robertsonian elements of reasoning which do not have a Keynesian equivalent (such as the quantity-theory link between changes in money flows and changes in prices and output, respectively; the effect of changes in the composition of aggregates on their total size; the period-sequence analysis, etc.). To these distinctive elements I shall return later. At present let us see how far we can go in drawing parallels. So far we have been concerned with the Robertsonian version of the "consumption function" and of the "marginal efficiency of capital." However, in Robertson as in Keynes, the amount of new investment depends on interest-rates as well as on the marginal efficiency. What about the rate of interest?

The Robertsonian treatment of the determinants of the interest-rate runs in terms of the loanable funds approach. The relationship between this approach and the Keynesian liquidity-preference theory has received much attention in the recent literature. I think it may now be stated that the two, when viewed as general approaches or frameworks, do not differ essentially, if allowance is made for "finance" in the liquidity theory. In this event the differences are expository rather than fundamental, especially if we interpret Keynes, with the Lange amendments, as not necessarily denying the influence of interest on the propensity to consume (time preference). The choice should be made to depend on convenience rather than on views concerning the factors properly belonging in a realistic framework. However, I do not see how a case can be made for the convenience of the liquidity-preference theory, or some analytical extension of it, if the discussion is concerned with the *structure* of interest rates.

If the Keynesian interest theory is interpreted as placing the emphasis on the assumed infinite elasticity of the liquidity function *at some far-above zero level of the interest-rate,* then the difference between Keynesian and Robertsonian views becomes somewhat more important. This, however, mainly reflects the fact that a break—or lack of continuity in the doctrinal development—does develop if stagnation is considered the essential content of the Keynesian theory. The significance of the Keynesian interest-floor proposition is that of explaining why the interest-rate does not adjust downward when, to restore full employment, it *should.* The Keynesian liquidity trap could of course be equally well expressed in terms of the loanable funds approach. In this approach the demand for idle balances must be treated as a constituent of the demand for funds or as a deduction from the supply. This constituent of the demand, or this deduction from the supply, *could* become infinitely responsive to interest-changes at *any* level of the interest-rate. But the belief that this *would* happen at some far-above zero level is specifically Keynesian and this belief has a bearing on the stagnation thesis.

I wonder whether even this difference is very significant. The stagnation thesis does not hinge on it. The views of economists agree on the potential existence of a "liquidity trap" somewhere in the neighborhood of the zero rate. No one will part with money at the zero rate (or even at a very low positive rate which just suffices to compensate him for the institutional costs and inconveniences of security transactions) provided that he can keep money free of cost, or at negligible cost. This is another way of saying that very near the zero rate the liquidity-preference function, or its equivalent in some alternative model, undoubtedly does become infinitely elastic. Neither Robertson

nor other authors have disregarded this in pre-Keynesian days. The real problem in connection with the stagnation doctrine, therefore, is whether to entrepreneurs the outlook seems favorable enough to induce them to invest on a sufficient scale, given the terms on which money can be borrowed and lent. If the outlook is chronically deficient, stagnation is the result. Robertson saw clearly that this *could* develop even if "the" interest-rate declined to the neighborhood of the zero level. It is somewhat less unlikely to occur if the interest-rate (say, the rate on long-term governments) "got stuck" somewhere around 2 per cent, but I believe that in such circumstances most of us would be unwilling to attribute more than a small share of the responsibility to the 2 per cent. If we wish to interpret the Keynesian theory as the point of departure for the stagnation doctrine, the emphasis should be placed on the possibility that the "marginal efficiency" may be chronically low and inelastic and that this may not be accompanied by a reduction of the propensity to save out of income. The emphasis should not, I think, be placed on the Keynesian interest theory.[5]

In the Robertsonian theory the business outlook may be deficient enough to reduce the amount of investment to any extent and this need not reduce the propensity to save out of income. Stagnation is a possibility in this theory and the possibility arises because investment may be insufficient to fill the savings gap at the full-employment level of income, in spite of the interest-rate adjustments that may take place in such circumstances. It is sometimes suggested that this interpretation of stagnant constellations is specifically Keynesian because it presupposes the concept of the "consumption function"—in the sense of $C=C(Y)$—and this function made its first appearance in the *General Theory*. However, what is truly required for this sort of theory is not a *unique* relationship between consumption and income (which surely does not exist in reality) but recognition of the fact that ***consumption and savings depend importantly on the level of income,*** and that the

[5] The worsening of business expectations (adverse shift of the marginal efficiency function) cannot lead to underemployment if the liquidity function has zero elasticity throughout the range of interest-rates actually ruling *and* does *not* shift to the right; and whatever underemployment does to develop when the liquidity function is not vertical throughout the relevant range, or when it does shift to the right, can be remedied by increasing the supply of money in wage units *except* if the liquidity function is *infinitely* elastic at the ruling interest-rate and at the same time and consumption function fails to shift upward with a rise in the real value of cash balances. Therefore chronic stagnation, such as is not simply a matter of insufficient money supply in wage units, does assume that business expectations are sufficiently unfavorable to lower the interest-rate to a floor level at which the liquidity function is infinitely elastic. But if expectations are sufficiently unfavorable, then it does not matter whether the floor level lies at 2 per cent or at 0.1 per cent. The proposition that a floor level would be hit before the rate becomes negative is, and has been, entirely uncontroversial. Allowance for the institutional costs of lending and borrowing obviously leads to the conclusion that the floor must lie above zero.

further variables on which the savings-ratio may depend are not in all circumstances capable of assuming values which, at the given income-level, will equate investment to savings. In the Robertsonian analysis this is not only clearly recognized and explicitly discussed, but even emphasized. Conditions may exist under which the rate of interest would have to become negative to equate investment to saving, at a given level of the disposable income. We shall see later that in Robertsonian approach compensatory monetary and fiscal policy are viewed as significant instruments for reducing "inappropriate" fluctuations in income and employment, but they are incapable of establishing a negative money rate of interest. The treatment of this problem in Robertson's work of the nineteen-twenties does not of course suggest that a chronic condition of stagnation is to be anticipated. But Robertsonian analysis does suggest that in depressions the shape of the relevant functions may very well be such that the equating of saving with private investment at the full-employment level would require a negative money rate of interest which is not in reality obtainable.

The Robertsonian discussion of depressions leads to the conclusion that, *if we are faced with such conditions, public expenditure is the only effective means of compensatory policy.* One of the two chapters which were added to *Money* in 1947 takes account of the post-Keynesian literature on *secular* stagnation. The author does not feel that he can *refute* the prediction of pessimists that "this time the wolf of stagnation is . . . ready to start gnawing at our vitals as soon as the processes of post-war reconstruction are complete." Yet we are reminded that "such prophecies have been made before and have not in fact been fulfilled, Dame Nature or Dame History having always in the end turned out to be keeping another card up her sleeve, though she has been sometimes rather slow in shaking it down." The Robertsonian structure does possess a stagnationist corner, and some of his prescriptions for proper behavior *in that corner* are in the nature of "Keynesian" prescriptions (although they are chronologically pre-Keynesian). But the reader is not made to believe that he probably will be sitting in that corner during most of his life—war or no war. Outside that corner the long-run behavior of interest-rates is dominated by investment opportunities which give rise to a demand for loanable funds, and by savings which are supplemented by money creation to supply these funds.[6]

[6] In Keynesian terminology investment opportunities tend to raise the rate of interest because they create a demand for money ("finance"). The activity which Robertson defines as saving (p. 269, *supra*) tends to reduce the rate of interest because it reduces the amount of money *needed* under the Keynesian income motive (for consumption), and hence increases the amount of money *available* for finance and for speculative purposes.

IV. *Robertsonian Economics and the Distinctive Features of the Keynesian Approach*

Does then Keynes minus stagnation amount to a more systematic presentation of Robertsonian (or perhaps Neo-Wicksellian) equilibrium: to a presentation which is more elegantly formalized, except that the equilibrium is taken out of the context of a continuous process and hence must be placed back in that context with tools not contained in the original Keynesian apparatus?

In the first and crudest approximation, Keynes minus stagnation does perhaps amount to this. But exclusive concern with overlapping elements would be misleading. The Keynesian theory possesses important features which distinguish it from the theories out of which it grew. It may be possible to argue that *all* these are connected with a stagnationist outlook, but in some cases the connection is sufficiently indirect to deserve attention under a separate heading. In the subsequent sections we shall return to distinctive features of the Robertsonian system.

The link between changes in income (below the full-employment level) and changes in employment is brought out more forcefully in the *General Theory* than in the earlier treatments. The method by which this is accomplished—measurement of output in wage units rather than in money of constant general purchasing power—is crude but it nevertheless focuses attention on the fact that unemployment is the most significant of the social menaces which are created by depressions. This, I think is not merely a subjective judgment of value. It is a judgment pertaining to the conditions of survival of given social and economic institutions. At the same time, these conditions of survival include also the avoidance of chronic inflationary pressure and we shall see later that for the analysis of price-output interactions the Keynesian theory is much less suitable than the Robertsonian. Keynes had to pay a price for the direct link between the magnitudes of his analytical system and the level of employment. Owing to measurement in wage units, changes in Keynesian "income" are intended to express changes in employment and thereby in the level of real activity. While it is recognized that the wage unit itself (*i.e.*, the deflator) *may* change when money expenditures do, the system is certainly not built for an analysis of changes in the deflator. The concept of aggregate physical output—the value of output corrected for *price changes*—also has serious pitfalls. But by first counting in money, then linking money flows to prices, and finally focusing their attention on physical output, Robertson and others were much less apt to detract attention from finite supply-elasticities and from the significance of price tendencies.

A similar argument can be developed with respect to the Keynesian treatment of the problem of wage adjustments. The fundamental difference between changes in the general level of money wages and wage changes in specific industries is brought out more forcefully in the *General Theory* than in the earlier literature. Here again, the assumptions of Keynes' analysis are comparatively simple: With minor qualifications the general price level is assumed to move in the same proportion as the general wage level, and thus real wages are assumed to stay unaffected.[7] This may rest on the sweeping notion that it is not too unrealistic to represent the product markets as purely competitive, with labor playing the rôle of the only ultimate factor of production. However, in reality product markets are not purely competitive and it is not clear why all other income rates should change in the same proportion in which money wage rates do. In fact the *minimum* requirement for unchanging real wage rates (in the event of a general change in money wage rates) may be milder than was just suggested. The minimum requirement, it seems to me, is that monetary investment demand as well as consumer demand should change in the same proportion as the money wage rate and hence that the *ratio* of the demand for investment goods *to* the forthcoming consumer demand should be a parameter which is uninfluenced by the money-wage level. A change in the real wage rate would have to bring a change in this ratio (in equilibrium) because the propensity to consume would have to change. But in whatever fashion we wish to state the underlying assumptions, they are certainly over-simplified, and it would be unreasonable to expect proportionate adjustment of effective demand and of prices to all changes in the general level of money wage rates, even aside from the Keynesian qualification pertaining to repercussions via liquidity and the rate of interest. At present we possess no general theory that would lead to definite conclusions concerning the size of the price

[7] The Keynesian qualification that general money wage changes are associated with a change in the existing degree of liquidity in terms of wage units (and hence with a change in the interest-rate and in investment, and via the multiplier also in consumption) is perhaps not "minor" from an analytical point of view. The significance of the qualification becomes small if the liquidity function is assumed to be very elastic; and its significance is *generally* small for the appraisal of Keynesian views as a whole (in contrast to the appraisal of the formal apparatus itself) because in connection with this qualification Keynes places the main emphasis on the fact that it would always be possible to adjust the supply money directly. Any favorable effect of a general wage change could be obtained in a much simpler way by this direct method, and any unfavorable effect could be offset by the use of this method. The theory assumes that a general change in money wage rates affects aggregate output merely via liquidity and interest (aside from qualifications which are *really* minor). I believe that a general change in money wage rates is likely to have an effect also on the "marginal efficiency," that is to say, I see no good reason for assuming that, aside from repercussion via the interest-rate, the monetary demand for investment goods tends to adjust in the same proportion as the demand for consumer goods.

movement which develops from a given movement in money wage-rates. But effective demand and prices do move when the general level of money wages changes and hence the framework suitable for the analysis of general wage changes must be different from that traditionally employed for the discussion of changes in small sectors of the economy. It would be quite wrong to believe that this was overlooked in the earlier literature in general, or in the Robertsonian analysis in particular. But it is true of Keynes more than of his predecessors that he devised a comprehensive technical apparatus which compels its user strictly to distinguish from the outset a general wage change from a specific. At the same time, it is true of Keynes in contrast to his predecessors that his simplifying assumptions reduce the problem of general wage changes to almost complete insignificance.

As compared to analysis of the Robertsonian type, Keynes' assumptions increase the usefulness of the Keynesian theory in some respects and reduce it in others. Such a statement could be defended in regard to the specifically Keynesian features so far considered and also in regard to the Kahn-Keynes multiplier relationship which probably had more influence on the analytic thinking of the last two decades than any other "Keynesian" innovation of the technical apparatus. The logical validity of the multiplier does not depend on the assumption that primary expenditure propagates itself exclusively via *consumption*-respending but, whenever the channels of propagation become more complicated, the Kahn-Keynes multiplier approach must be supplemented by the analysis of these other channels. Only on severely restrictive assumptions can the supplementary analysis be placed into a reformulated multiplier framework, or into a framework derived exclusively from the Kahn-Keynes multiplier and the acceleration principle.

The Keynesian system as a whole is particularly well built for the analysis of conditions influenced by a deflationary basic tendency; the wage unit of measurement is particularly well chosen for an economy with rigid money wages *or* with price-wage ratios which are unaffected by the money-wage level; the consumption function and the multiplier are particularly well constructed for conditions where savings out of income depend practically only on the income-level itself and where additional income, if not consumed, tends to be hoarded. The system strikes one as particularly rich if conditions of this sort are faced. But it will stand a good deal of amending and adapting. It is true of a substantial range of problems that the apparatus best suited for their understanding contains significant Keynesian additions, even though earlier savings-investment analysis, such as the Robertsonian, contained most of the basic ingredients required. It

also contained significant elements with which Keynesians have almost completely dispensed and which will gradually have to be collected again.

V. *Keynesianism, Robertsonianism and the Question of Social Policy*

The controversies of the past fifteen years have left many conservatives with the impression that Keynesianism is related to a political orientation which is of left-wing character, not in the sense of Marxism but in that of pronounced welfare-statism, or perhaps British Labor Party socialism. There has been considerably less temptation to associate Robertsonian economics with political creeds, but Robertson's choice and treatment of problems show a vivid interest in methods of making a market economy, such as is based on free choice, work efficiently. Is it then reasonable to interpret Keynesian economics as a body of doctrines which in some sense lies "to the left of" Robertsonian economics?

I believe that the answer which this question deserves is a somewhat qualified no. There exists only a very tenuous link between Keynesianism and a political program of direct controls and (or) of large-scale social services financed by highly graduated taxation. A Keynesian who opposes such a program is not at all inconsistent. A Keynesian who feels that he bases his support of such a program on the *General Theory* is reading between lines, or at best is placing more emphasis on certain specific statements in the book than on others. Keynes too was vividly interested in making a market economy, such as is based on free choice, work efficiently.

It is true, however, that Keynes made it rather easy for a person to read between the lines and then to establish a link between his analysis and (non-Marxian) left-wing views. He did so mainly by showing no awareness of a problem which might have caught his eye. "Errors of omission" in such a subtle sense of the term are not capable of being interpreted in any clear-cut way.

Keynes explained how in his opinion full employment could be accomplished. He showed no awareness of the fact that a consistent full-employment program of his variety would result in substantial inflationary pressure and would therefore in practice have to be supplemented by comprehensive direct controls. This would be true even if we could disregard the possibility that, in consequence of a shortage of cooperating factors, supply-elasticities may fall significantly before full employment is reached. Against the background of what might in effect become a full-employment guarantee, groups of workers and of employers would undoubtedly attempt to improve their relative position, as compared to other groups of the same sort, by pressing for

higher rates of money income; and, given the guarantee in question, they would be capable of putting a wage-price escalator in motion throughout the economic system. There of course does exist a degree of integration (centralization) of economic activities which would reduce the number of groups with wills of their own to such an extent that they could "collude" to prevent a self-defeating inflationary process. But extreme integration of this sort would by its very nature be a socialistic phenomenon; and in the absence of such integration, that is, on more realistic assumptions, comprehensive direct controls would be required, which are incompatible *per se* with the principles of a market economy based on free choice. Furthermore, by taking for granted a comprehensive system of controls and, for the greater part of the time, also the necessity of significant compensatory public expenditures, we would create a great deal of additional space for an ambitious program of direct social services. In this kind of reasoning it is usually assumed that democratic political institutions are suitable for efficient administration of permanent direct controls: a very questionable assumption, which however need not detain us here. We merely mean to indicate in what way it is possible to construct a highway from Keynesian analysis to certain varieties of socialism. In building it, the constructors may make use also of Keynes' inclination to emphasize the consumption-raising effect of increased tax-graduation *more* than its possible adverse effect on the marginal efficiency schedule.

Yet it must be emphasized that Keynes himself did not build this highway. He did not say what in his opinion the proper policy would be if under a consistent full-employment program a chronic inflationary pressure should develop. Consequently, it is possible also to construct a bridge from Keynesian analysis to policies of a very different sort which are geared to the wage-price level as well as to the level of employment. These policies can be bridged with Robertsonian analysis just as easily as with the Keynesian. Compensatory employment policies can be used in a measure not exceeding that which is compatible with a reasonably stable (not necessarily constant) price level, *in the absence of direct controls.*

To say that Keynes *advocated* a policy of this sort would be no less arbitrary than to say that he built a highway to socialism (although he must have been more nearly a "conservative" than a "radical" Keynesian). The truth of the matter is that the Keynesian theory stops short of this dilemma. It has an empty spot in the area where the dilemma is located. In contrast, Robertsonian theory has no empty spot in this area. Robertson has consistently given a great deal of attention to the problem of interactions between movements in output

and in prices. The reader may of course accept the results of Robertsonian analysis, and then, if he so wishes, may introduce the judgment of value that freedom from direct controls is less important than the avoidance of those fluctuations in employment which could not be eliminated without creating a chronic condition of suppressed inflation. But if he wishes to make this judgment, he cannot claim that he is moving in a vacant area of Robertsonian theory which must necessarily be filled either in this or in some other fashion. In the *General Theory* Keynes was primarily—almost exclusively—interested in employment. Robertson has been equally interested in price tendencies, and of course in trends in productivity. This is an important difference. But crude political terminology is inadequate for expressing it.

VI. *The Unexploited Residue*

To the forward-looking reader, the study of Robertson's work is interesting mainly because the "Keynesian" late 'thirties and 'forties have failed to assimilate essential ingredients of a reasonably complete theory of money and employment. Temporary lopsidedness lies in the nature of progress. But it had better remain temporary.

Robertsonian thinking is permeated by awareness of *structural* problems, that is, of the influence of the *composition* of aggregates on the size of these aggregates. Keynesianism of the late 'thirties and of the 'forties suffers from lack of such awareness. Robertson's distinction between appropriate and inappropriate fluctuations of output is essentially a structural distinction in this sense. In the Robertsonian theory, alterations in the real operating costs of an industrial group, as well as alterations in the intensity of the relative demands of industrial groups for each others' products, require structural adjustments. Inventions are the most important reasons for changes in the real operating costs of an industry; in the *Study,* much more than in the later works, changing harvests are also given a prominent place. The structural or compositional adjustments in question are associated with changes in aggregate output which depend on demand and supply-elasticities. They play a significant rôle in the Robertsonian theory.

Cost reduction in a specific sector of the economy, and the reduction of the sector's selling price *relatively to the price charged by another sector,* may increase or decrease the output of the other sector. Fundamentally, with the money-veil lifted, the answer depends on the elasticity of demand of the other sector, *in terms of effort* (hence of output), for the products of the first sector. If, for example, this elasticity exceeds unity, the output of the other sector will rise. In a monetary economy—in contrast to a barter economy—these elasticities must be put together, so to speak, from price and income elasticities of *monetary*

demand and supply, and hence they are influenced by monetary and fiscal policy. This amounts to saying that the observable elasticities of demand in terms of effort and the corresponding movements in aggregate output depend on monetary-fiscal policy as well as on the basic propensities of the public. What elasticities in terms of effort and hence what movements in output deserve to be favored by policy?

"Appropriate" movements of output are movements (initial changes in specific sectors plus adjustments in others) which do not have to become reversed, that is, do not shoot beyond the mark. The elasticities of demand in terms of effort which underlie these movements are no different in the long run from what they are in the short run. Even a policy which wanted to limit itself to facilitating appropriate movements in aggregate output would not necessarily want to keep the general or average price level precisely constant. This is because changing relative prices with a constant general price level mean falling prices in specific sectors, and significant price reductions in important sectors are apt to impede the adjustments in the various sectors to the initial change. A mildly rising general price level is therefore more likely to have the effect of facilitating the "appropriate" movements of output.

However, it would be unreasonable to try to suppress all "inappropriate" fluctuations of output. The inappropriate movements in specific sectors are movements based on elasticities of demand in terms of effort, such as are different in the long run from what they are in the short run, and hence do result in a subsequent reversal (do carry the original adjustment to specific changes *beyond the mark*). They are consequences of essential characteristics of the economic system which on a sufficiently simplified level of analysis would appear as "imperfections." For example, indivisibilities of real capital force producers to invest either too much or too little, as compared with real requirements. If they invest too much, then this will lead to a subsequent sharp reduction of their demand for factors of production. The durability of plant and equipment has the same effect, since it may be viewed as indivisibility in the time-dimension. This is made clear by the kind of reasoning which is usually presented for explaining the acceleration principle. Also, individual producers are incompletely informed concerning the simultaneous expansionary and contractionary moves of other producers and they cannot dependably judge the consequences of their simultaneous actions. The length of the gestation periods to which certain investments are subject, aggravates these disturbances: by the time the investments become completed the conditions which called them forth may have changed considerably. The movements resulting from these factors are "inappropriate" in the sense of carrying the original adjustments beyond the level which is appropriate in the long run. But only in a theoretical

model could they be kept strictly apart from the appropriate movements. In the real world we must make up our minds as to the desirability of a whole complex of responses to initial changes, and such a complex always contains appropriate as well as inappropriate elements. Policy cannot be directed toward appropriate changes alone. But it can be directed toward the maximum amount of appropriate change (adjustment to technological improvement, to other real-cost changes, and to buyers' preferences) which is compatible with *not too much* inappropriate fluctuation. This proposition can of course not be formulated with the rigor of a mathematical theorem because its interpretation depends on subjective weighing in individual instances. But it can serve as an eminently reasonable guiding principle.

The downturn is a direct consequence of saturation in the specific areas of investment in which inappropriate expansion has carried the adjustment beyond the mark. Frequently (but not always) the downturn is a consequence also of limits to the amount of investible funds which the monetary authority can let the banking system provide without producing an excessive degree of forced saving[8] by means of inflation. It seems to me that the second of these two causes, which may of course interact with the first,[9] is placed more into the forefront in *Banking Policy* than in the *Study* or in the later *Essays*. Hence those sections of *Banking Policy* which are specifically concerned with the downturn move pretty much along the lines of the "monetary overinvestment theories," while the earlier and the later accounts distribute the emphasis more evenly, or even place other factors (saturation at a given level of technological knowledge) in the forefront. But what is placed in the forefront is invariably a structural aspect of dynamic development, rather than purely aggregative relationships.

The range of problems on which this analysis focuses attention has received little attention during the 'thirties and the 'forties. However, for some time there has existed renewed interest in certain elements of this complex. It consists of problems pertaining to the structure of output and to the structure of demands in a world where, as a consequence of uncertainty, producers must rely on guesswork; to the rate of technological advance; to production lags and, generally speaking, to timing in view of durabitity in indivisibility; and to the price tendencies most suitable for attaining the maximum degree of long-run progress without too much instability. No reader of Robertson can overlook the fact that these are problems of vital significance.

[8] Forced saving (automatic lacking) in the sense of the diversion of goods *from* their producers (*i.e.*, from recipients of money incomes already earned) *to* investors who are borrowing "new money" from the banking system.

[9] "Saturation" is not an absolute concept. An area of investment activity may be "saturated" at high rates of interest and not "saturated" under an easy money policy.

Concern with problems of the price level is likely also to revive interest in a proper synthesis of savings-investment analysis with ideas rooted in the quantity theory. Robertson's work shows clearly that such a synthesis existed in pre-Keynesian days. That equilibrium, or monetary expansion and contraction, can be expressed in terms of the relationship between savings and investment is neither more nor less true than that these conditions can be described with reference to the stock and the velocity of money. Neither the consumption function nor velocity (or any function from which alternative velocity values could be read) is truly stable, certainly not in the sense in which projections imply stability. It would be unreasonable to disregard the supply of money in the analysis of the factors which may produce changes in the income-consumption relation; and it would be unreasonable to disregard the propensity to consume in a search for factors which may bring about changes in velocity or in the quantity of money. Robertson saw this twenty-five years ago. In this, as in some other respects, contemporary economists are on the way to a rediscovery.

But, on the whole, a series of rediscoveries is not what is needed. In the past two decades a great deal has been built on foundations which were laid in the preceding era. While much of this will prove durable, there is much that will not. What will replace the temporary structures? What else can be built on the same or on similar foundations?

SPATIAL PRICE EQUILIBRIUM AND LINEAR PROGRAMMING

By PAUL A. SAMUELSON*

I.—*Introduction*

Increasingly, modern economic theorists are going beyond the formulation of equilibrium in terms of such marginal equalities as marginal revenue equal to marginal costs or wage rate equal to marginal value product. Instead they are reverting to an earlier and more fundamental aspect of a maximum position: namely, that from the top of a hill, whether or not it is locally flat, all movements are downward. Therefore, the real import of marginalism is embodied in the following type of statement: for any produced units of output, extra revenues exceed extra costs; but for any further producible units, extra revenue would fall short of extra costs. These marginal inequalities—which need not apply to small local movements alone—do, in well-behaved cases with smooth slopes, imply the usual marginal equalities. But they are more general, in that from them we can derive most of what is potentially useful in marginal analysis, a point which has been missed by both the defenders and attackers of "marginalism." And more than that, the marginal inequalities can apply to cases (like simple comparative advantage) where the marginal equalities fail.

In recent years economists have begun to hear about a new type of theory called *linear programming*. Developed by such mathematicians as G. B. Dantzig, J. v. Neumann, A. W. Tucker, and G. W. Brown, and by such economists as R. Dorfman, T. C. Koopmans, W. Leontief, and others, this field admirably illustrates the failure of marginal equalization as a rule for defining equilibrium. A number of books and articles on this subject are beginning to appear. It is the modest purpose of the following discussion to present a classical economics problem which illustrates many of the characteristics of linear programming. However, the problem is of economic interest for its own sake and because of its ancient heritage.

The first explicit statement that competitive market price is determined by the intersection of supply and demand functions seems to have been given by A. A. Cournot in 1838 in connection, curiously enough, with the more complicated problem of price relations between

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two spatially separate markets—such as Liverpool and New York.[1] The latter problem, that of "communication of markets," has itself a long history, involving many of the great names of theoretical economics.[2] Dr. Stephen Enke in a recent interesting paper generalized the problem of interspatial markets and gave it an elegant solution.[3]

Proceeding from the Enke formulation, I propose in this paper (1) to show how this purely descriptive problem in non-normative economics can be cast mathematically into a *maximum* problem; and (2) to relate the Enke problem to a standard problem in linear programming, the so-called Koopmans-Hitchcock minimum-transport-cost problem.[4]

Spatial problems have been so neglected in economic theory that the field is of interest for its own sake. In addition, this provides a reasonably easy-to-understand example in the new field of linear programming. But, most important, insight into the fundamental nature of economic pricing is provided by the present discussion.

II.—*Formulation of the Two Problems*

In the Cournot-Enke problem, we are given at each of two or more localities a domestic demand and supply curve for a given product (*e.g.*, wheat) in terms of its market price at that locality. We are also given constant transport costs (shipping, insurance, duties, etc.) for carrying one unit of the product between any two of the specified localities. What then will be the final competitive equilibrium of prices in all the markets, of amounts supplied and demanded at each place, and of exports and imports?

From the description of the above problem, an economist would be tempted to guess that it includes inside it the following Koopmans problem, which I slightly reword to bring out the similarity: A specified total number of (empty or ballast) ships is to be sent out from each of a number of ports. They are to be allocated among a number of other receiving ports, with the total sent in to each such port being specified. If we are given the unit costs of shipment between every two ports, how can we minimize the total costs of the program?

[1] A. A. Cournot, *Mathematical Principles of the Theory of Wealth* (1838), Chap. X.

[2] J. Viner, *Studies in International Trade*, New York, 1937, pp. 589–91 gives references to Cunyngham (1904), Barone (1908), Pigou (1904), and H. Schultz (1935); for a non-graphic literary exposition, see F. W. Taussig, *Some Aspects of the Tariff Question*, Cambridge, Mass. (1915 and 1931), Chap. I.

[3] S. Enke, "Equilibrium Among Spatially Separated Markets: Solution by Electric Analogue," *Econometrica*, Vol. 19 (Jan., 1951), pp. 40–47.

[4] See T. Koopmans, *Activity Analysis of Production and Allocation* (Monograph 13 of the Cowles Commission, published by John Wiley, 1951) for references. The special transport problem itself is dealt with in Chapters XIV and XXIII and independently deals with a problem considered in 1941 by F. L. Hitchcock and in 1942 by a Russian mathematician, L. Kantorovitch. For a readable account, see T. C. Koopmans, "Optimum Utilization of the Transportation System," *Econometrica*, Vol. 17, Suppl. (July, 1949), pp. 136–46.

Note that total shipments in or out of any one place are an unknown in the first problem, whereas they are given in the second. In this sense the first problem is the more general one and includes the second inside itself. Note, too, that, as it stands, the first problem is one of decentralized price-mechanics: innumerable atomistic competitors operate in the background, pursuing their private interests and taking no account of any centralized magnitude that is to be maximized. Yet, even without Adam Smith's "as-if" principle of the Invisible Hand, our teleological faith in the pricing mechanism is such that we should be surprised if the resulting allocations resulted in costly cross-haulages: we instinctively feel that arbitragers could make money getting rid of any such inefficiencies.

A final hint suggests that the first problem, which is definitely not a maximum problem to begin with, might be convertible into a maximum problem. Enke provides a simple ingenious electric circuit for its solution in the case of linear market functions. At least since the work of Clerk Maxwell and Kirchhoff a century ago it has been realized that the equilibrium of simple passive electric networks can be described in terms of an extremum principle—the minimization of "total power-loss."[5]

It is not surprising, therefore, that the Enke problem can be artificially converted into a maximum problem, from which we may hope for the following specific advantages: (1) This viewpoint might aid in the choice of convergent numerical iterations to a solution. (2) From the extensive theory of maxima, it enables us immediately to evaluate the sign of various comparative-statics changes. (*E.g.*, an increase in net supply at any point can never in a stable system *decrease* the region's exports.) (3) By establishing an equivalence between the Enke problem and a maximum problem, we may be able to use the known electric devices for solving the former to solve still other maximum problems, and perhaps some of the linear programming type. (4) The maximum problem under consideration is of interest because of its unusual type: it involves in an essential way such non-analytic functions as absolute value of X, which has a discontinuous derivative and a *corner;* this makes it different from the conventionally studied types and somewhat similar to the inequality problems met with in linear programming. (5) Finally, there is general methodological and mathematical interest in

[5] In its simplest form, such a minimum problem is of conventional interior differentiable ("Weierstrassian") type, and it does not involve the quasi-linear boundaries, inequalities, and vertexes encountered in linear programming. Nonetheless, A. W. Tucker in an unpublished Office of Naval Research memorandum "Analogues of Kirchhoff's Laws" (Stanford, 1950) noted the similarity of the Kirchhoff-Maxwell problem to the linear programming problem of the Koopmans type. Moreover, I gathered from personal conversation with Professor Tjalling Koopmans that when he first solved the transportation problem years ago, before linear programming had been explicitly formulated, the analogy with the network problem readily occurred to him and helped guide his explorations toward a solution. See *Activity Analysis, op. cit.* pp. 258–59.

the question of the conditions under which a given equilibrium problem can be significantly related to a maximum or minimum principle.

III.—*The Two-Locality Case Graphically Treated*

The two-variable case provides a convenient introduction to the principles involved. The general n variable case then follows without much difficulty. Figure 1 shows the usual textbook back-to-back diagram determining the equilibrium flow of exports from market 1 to 2.

EQUILIBRIUM OF EXPORTS AND IMPORTS

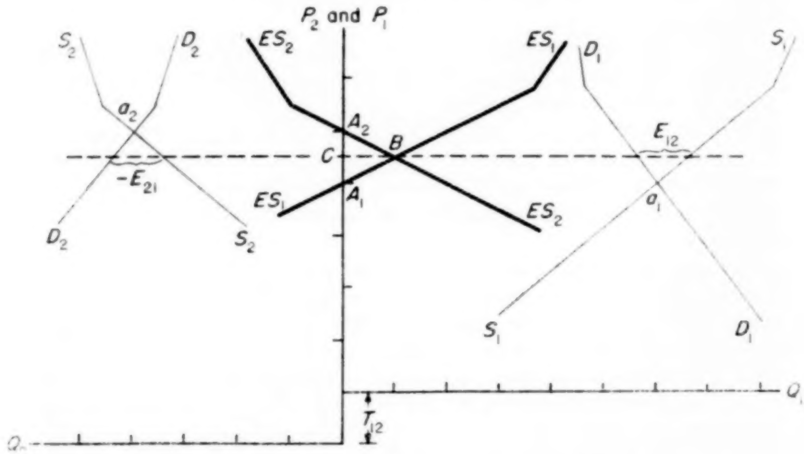

FIGURE 1. Equilibrium is at B where exports of 1 match imports of 2 at the differential between P_2 and P_1 equal to transport costs, T_{12}. Note shift in lower axis of 2.

Before trade, equilibrium would be at $P_1 = A_1$ where supply and demand in the first market just meet; or what is the same thing, where the excess-supply function ES_1 to ES_1, which is equal to the demand curve subtracted laterally at every price from the supply curve, is at its zero point. Likewise, $P_2 = A_2$ if no trade is possible.

But now suppose that goods can move from 1 to 2 for T_{12} dollars per unit, and from 2 to 1 for T_{21} dollars per unit. Since the pretrade price is lower in 1 than 2, trade will obviously never flow from 2 to 1 and so only the T_{12} figure is relevant. Because the initial differential in prices exceeds the transport costs, there will be a positive flow of exports from 1 to 2, and P_2 will come to exceed P_1 by exactly T_{12}. For this reason the axes of market 1 have been displaced relative to those of market 2 by the distance T_{12}.

The new equilibrium is shown at B, where the excess supply or exports of market 1 exactly equal the algebraically negative excess supply or imports of market 2. The bracketed distances E_{12}, and $-E_{21}$, and CB are all exactly equivalent depictions of these flows.

Of course, if A_1 and A_2 had been closer together than T_{12} (or T_{21}), then the markets would have split-up and the separate equilibria would be at (A_1, A_2). Had A_2 been less than A_1 by more than T_{21}, then the flow of exports would have automatically reversed directions so that E_{21} would be positive and E_{12} negative. What makes the problem interesting is its complicated non-linear equilibrium conditions:

(1)a $$\text{If} \quad P_2 = P_1 + T_{12},$$

any non-negative E_{12} may flow; $E_{12}>0$ implies $P_2 = P_1 + T_{12}$.

(1)b $$\text{If} \quad P_2 < P_1 + T_{12} \quad \text{and if} \quad P_1 < P_2 + T_{21},$$

then $E_{12}=0$ and $E_{21}=0$.

(1)c $$\text{If} \quad P_1 = P_2 + T_{21},$$

then $E_{21} \geqq 0$, depending upon total world supply and demand, etc.; $E_{21}>0$ implies $P_1 = P_2 + T_{21}$.

Figure 2 provides a new graphical restatement of what is shown in Figure 1. The same excess-supply curves are shown but this time the prices in the two countries are measured *from the same level* rather than with one axis shifted by the amount of transportation cost. However, the transport costs do enter into the problem. Look first at the two upper curves of the figure only. Now the final equilibrium is determined at JK where the two excess-supply curves differ vertically by T_{12}, as shown by the bracket.

This same equilibrium determination of exports and imports (E_{12} and $-E_{21}$) is shown in the lower part of the figure by the heavy NN curve which represents the *vertical* difference between the two excess supply curves. The final equilibrium is at F where the net excess-supply curve hits the curve of discontinuous transport costs $WXYZ$.

Figure 2 has the merit of suggesting how a shift in one or both of the excess-supply curves could cause the equilibrium intersection to be shifted over to the WX interval, with 2 exporting to 1 as in equation (1)c. It also suggests how the intersection *might* be on the XY interval, with exports and imports zero, and with prices related as in (1)b.

IV.—*Defining Social Pay-off*

Figure 2 paves the way toward a maximum or minimum formulation of the problem. An economist looking at these figures would naturally think of some kind of consumers surplus concept. The area A_1JKA_2,

and *OMFG*, its equivalent, cry out to be compared with the area under the transport curve, *OMFY*. However, the name consumers surplus has all kinds of strange connotations in economics. To avoid these and to underline the completely artificial nature of my procedure, I shall simply define a "net social pay-off" function, with three components:[5a] NSP = Social Pay-off in 1 + Social Pay-off in 2 − Transport Cost.

The social pay-off of any region is defined as the algebraic area under its excess-*demand* curve. This is equal in magnitude to the area under

EQUIVALENT DEPICTION OF SPATIAL EQUILIBRIUM

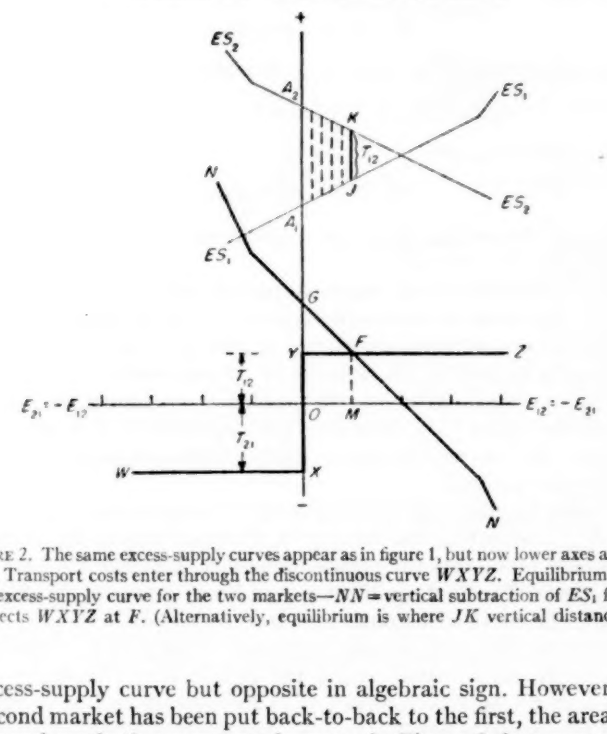

FIGURE 2. The same excess-supply curves appear as in figure 1, but now lower axes are evenly aligned. Transport costs enter through the discontinuous curve *WXYZ*. Equilibrium is where the *net* excess-supply curve for the two markets—NN = vertical subtraction of ES_1 from ES_2 —intersects *WXYZ* at *F*. (Alternatively, equilibrium is where *JK* vertical distance equals T_{12}.)

its excess-supply curve but opposite in algebraic sign. However, since the second market has been put back-to-back to the first, the area under the second market's excess-supply curve in Figure 2 does measure the second market's pay-off; and from it we must *subtract* the area under the first country's excess-supply curve. *Hence, the area under the net curve NN in Figure 2 does perfectly measure the combined social pay-off of both markets.*

[5a] This magnitude is artificial in the sense that no competitor in the market will be aware of or concerned with it. It is artificial in the sense that after an Invisible Hand has led us to its maximization, we need not necessarily attach any social welfare significance to the result.

In Figure 3 the curve *NON* indicates how the combined payoff of the two markets varies with algebraic exports from 1 to 2. From this we subtract the curve of total transport cost *UOU*. Total transport cost has a corner at the origin because of the discontinuity between T_{12} and T_{21} as shown in *WXYZ* of Figure 2; the algebraic integral of this discontinuous function leads to the V-shaped total function *UOU*.[6] We

MAXIMIZING NET SOCIAL PAY-OFF

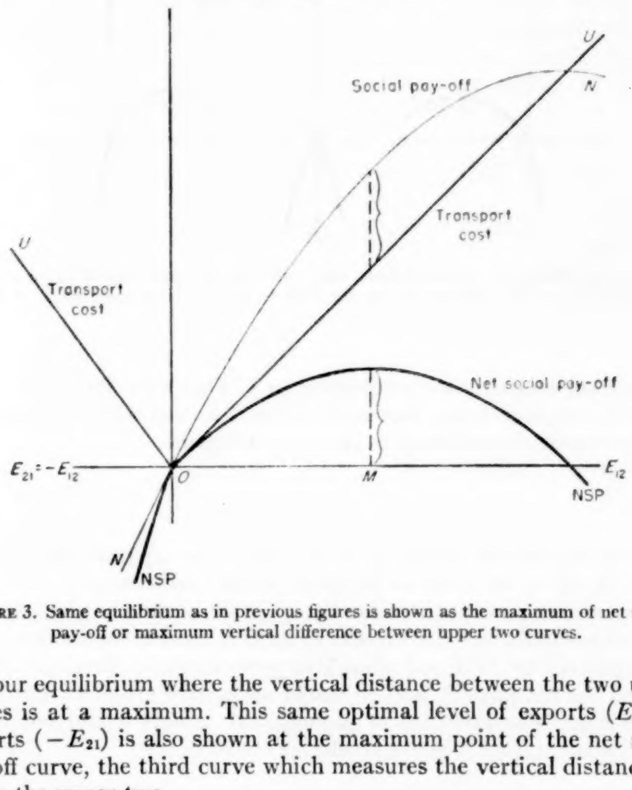

FIGURE 3. Same equilibrium as in previous figures is shown as the maximum of net social pay-off or maximum vertical difference between upper two curves.

find our equilibrium where the vertical distance between the two upper curves is at a maximum. This same optimal level of exports (E_{12}) or imports ($-E_{21}$) is also shown at the maximum point of the net social pay-off curve, the third curve which measures the vertical distance between the upper two.

This completes the two-variable case. Figure 4 illustrates that three possible cases could have emerged, corresponding to equations (1)a,

[6] The mathematical symbolism for this function can be written in many equivalent ways: e.g.

$$t_{12}(E_{12}) = T_{12}E_{12} \text{ for } E_{12} \geq 0$$
$$= T_{21}(-E_{12}) \text{ for } E_{12} \leq 0$$

and still other equivalent symbolisms (involving absolute values of E_{12}, etc.) can be found.

(1)b, and (1)c. In Figure 4a, region 1 exports to 2 so that the maximum point is smooth; the corner in the curve, due to the discontinuity in the rate of transport cost, is on the vertical axis and does not affect the maximum. Similarly Figure 4c shows a normally smooth maximum

TYPES OF MAXIMA FOR NET SOCIAL PAY-OFF

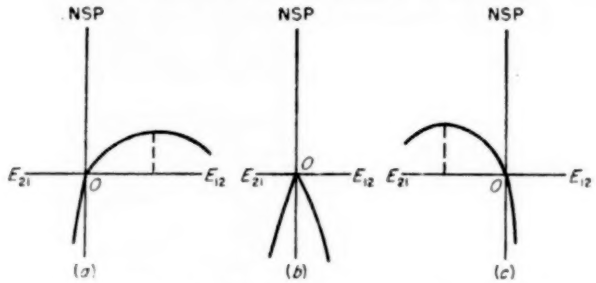

FIGURE 4. Because of transport costs, each curve of net social pay-off has a corner at the origin. In (b) price differentials are too little to surmount transport costs, so trade is zero.

without corners; 2 is then exporting to 1. Figure 4b shows the intermediate case where the maximum point is a cusp with a corner: the transport cost discontinuity is obviously to blame.

* * *

The final point to emphasize is this: Once the separate pay-off functions are set up as areas or integrals of the excess-supply curves and once transport-cost functions are known, a clerk could be given the task of experimentally varying exports so as to achieve a net maximum. He could proceed by trial and error, always moving in a direction that increased the net pay-off, and he would ultimately arrive at the correct equilibrium. The existence of pathological corners would not impair convergence; rather it might accelerate convergence.[7]

[7] Mathematically, calling the excess-supply functions $s_i(E_i)$,

$$NSP = -\int_0^{E_{12}} s_1(x)dx - \int_0^{-E_{12}} s_2(x)dX - t_{12}(E_{12}).$$

By setting $dN/dE_{12}=0$, we arrive at conditions equivalent to equations (1):

$$(1) \qquad -T_{21} \leqq s_2(E_{21}) - s_1(E_{12}) \leqq T_{12}, \quad E_{12} + E_{21} = 0$$

and with $E_{12} \neq 0$ implying that one of the equality signs holds. A gradient method of making dE_{12}/dt proportional to dN/dE_{12} would always converge for positive sloping s_i functions.

V.—*The General Case of Any Number of Regions*

Instead of two regions suppose we have $i=1, 2, \cdots, n$ regions. The algebraic amount of exports from i to j we can write as E_{ij} and it will of course be the same thing as the algebraic imports of j from i, $-E_{ji}$. Table I shows the two-way table relating these interregion exports to the total algebraic exports of any region, E_i. (Note that about half the numbers in the table will be negative.) Suppose too that we are given T_{ij}, the transport cost per unit of product moved from region i to region j. These transport costs could also have been arranged in a two-way table. Finally suppose that for each region we have an excess supply function $s_i(E_i)=P_i$, which is calculated by taking the lateral difference between local supply and demand functions.

TABLE I

Region	1	2	$\cdots$	j	$\cdots$	n	Total exports (algebraic)
1	$\cdot$	$E_{12}=-E_{21}$		E_{1j}	$\cdots$	$E_{1n}=-E_{n1}$	$E_1=\sum_j E_{1j}$
2	E_{21}	$\cdot\ \cdot$		$\cdot$		$\cdot$	$E_2=\sum_j E_{2j}$
$\cdot$							$\cdot$
$\cdot$							$\cdot$
$\cdot$							$\cdot$
i	E_{i1}	$\cdot$		$E_{ij}=-E_{ji}$		E_{in}	$E_i=\sum_j E_{ij}$
$\cdot$							$\cdot$
$\cdot$							$\cdot$
$\cdot$							$\cdot$
n	E_{n1}	$\cdot$		E_{nj}		$\cdot$	$E_n=\sum_j E_{nj}$
Total imports (algebraic)	$-E_1=\sum_i E_{i1}$	$-E_2=\sum_i E_{i2}$	$\cdots$	$-E_i=\sum_i E_{ij}$	$\cdots$	$-E_n=\sum_i E_{in}$	$0=\sum_i\sum_j E_{ij}$ $=$ total net exports

As in the two-variable case, we can define a social pay-off for every region in terms of the area under the excess-demand or excess-supply function. This will depend only upon the total exports of the region and can be written

$$(2) \quad S_i(E_i) = \text{area under the excess-demand curve} = -\int_0^{E_i} s_i(x)dx.$$

The transport costs can be written as a function of exports between any two regions; or as $t_{ij}(E_{ij})=$ a V-shaped curve like that shown in Figure 3.[8]

Now we can form a final net social pay-off for all the regions as the sum of the n separate pay-offs minus the total transport costs of all the shipments:

[8] Mathematically, this function has a corner at the zero export point, and will equal $T_{ij}E_{ij}$ if i exports to j and $T_{ji}E_{ji}$ if j exports to i. Note T_{ij} need not equal T_{ji}, but it can be shown that by definition $t_{ij}(E_{ij})=t_{ji}(E_{ji})$.

$$NSP = \sum_{1}^{n} S_i(E_i) - \sum_{i<j}\sum t_{ij}(E_{ij}). \tag{3}$$

Because $E_i = E_{i1} + \cdots + E_{in}$, this is a function of all the E_{ij}'s and when we have found its maximum we have arrived at the final unique equilibrium trade pattern.[9]

Providing that all domestic supply curves cut demand curves from below (as price rises), which is the so-called case of normal or stable intersection, the excess-supply curves will never be falling curves; and it will necessarily follow that the maximum position will exist and be unique. At the maximum point, we will find

$$-T_{ij} \leqq s_i(E_i) - s_j(E_j) \leqq T_{ji} \qquad \text{(for all } i, j = 1, \cdots, n) \tag{4}$$

with both inequalities holding only if $E_{ij} = 0 = E_{ji}$; if $E_{ij} > 0$, then the right-hand equality must hold; and if $E_{ji} < 0$, the left-hand equality must hold. Recalling that the s_i's and P's are the same thing, we obviously end up with the proper n-region generalization of equations (1) that were derived for the two-region case.

Our task has now been successfully completed. The problem in descriptive price behavior has been artificially converted into a maximum problem. This maximum problem can be solved by trial and error or by a systematic procedure of varying shipments in the direction of increasing social pay-off.[10]

* * *

Once the exports are determined between any two places, it is obvious that the total exports of any and every place are also determined. Some of the n-regions will end up as positive net exporters; some will end up as net importers (negative net exporters); some may even end up in perfect balance, with zero imports and exports. Reflection will show that we are free to omit all such balanced regions from our further dis-

[9] Since we know that the imports of one region are the exports of another, we do not have to specify all the $n^2 E_{ij}$'s in Table I. Instead we can work with all those that are above the hollow diagonals of the Table, inferring those below by using the identity $E_{ij} = -E_{ji}$. Thus, we may adopt the convention of having $i<j$, and may work with $n(n-1)/2$ unknown E_{ij}'s. Incidentally, most of the E_{ij}'s will turn out to be zero: *i.e.*, a typical export region will export to only a few other regions and a typical importer will import from only one or a few regions. More exactly, it is a theorem of linear programming that the number of positive exports need not exceed $n-1$. It will also be true that if T_{ij} and E_i are all integers, the E_{ij}'s will all be integers.

[10] Even if this were not a market problem, we could set up pretended competitive markets whose supply and demand relations might be used to help compute the correct mathematical solutions. Computing clerks could be instructed to act like brokers and arbitragers, etc. Or we could dispense with all markets, and instead watch how NSP is changing as we change each E_{ij}, continuing to move always in the direction of increasing NSP. Doing this long enough will carry us to the top of the hill.

For the case where the excess-supply curves are straight lines Enke has given a simple electric circuit, consisting of resistances, rectifiers, and batteries, which will give the final solution as a measurement of currents and voltages. See Enke, *op. cit.*, Figure 1, p. 45 and the next section below.

cussion, since so long as they remain in balance they need not export or import from any locality.[11]

It follows that we can divide our n-regions up into $i=1, \cdots, m$ export regions and $i=m+1, \cdots, n$ import regions. Reflection will show that a net import region will never export to any region. (Why send exports out if you have to expensively ship in imports to replace them? Instead ship directly.) Reflection also shows that a net export region will never import from any region. Thus, the only non-zero E_{ij}'s are from an export region i to an import region j.

What does this mean for Table I? It means that we can label our regions so as to give the first m numbers to our export regions and the

Table II

Regions	$1 \cdots m$	$m+1,$	$m+2$	$\cdots$	n	Total Exports
exporters						
1		$E_{1,m+1}$	$E_{1,m+2}$	$\cdots$	$E_{1,n}$	(E_1)
2	zeros	$E_{2,m+1}$	$E_{2,m+2}$		$E_{2,n}$	(E_2)
·		·				
·		·				
·		·				
m		$E_{m,m+1}$	$E_{m,m+2}$		$E_{m,n}$	(E_m)
importers						
$m+1$						
·	redundant					
·	negative		zeros			
·	numbers					
n						
Total Imports		$(-E_{m+1})$	$(-E_{m+2})$	$\cdots$	$(-E_n)$	

last $n-m$ numbers to the import regions. Table I will then divide itself up into 4 major blocks: positive numbers will then be in only the upper right-hand block relating the exporting countries to the importing countries; the two blocks relating exporters to exporters and importers to importers will necessarily be full of zeros, and can be neglected. The block relating importers to exporters will consist of negative numbers only and will simply duplicate our positive numbers.

[11] That is $E_i=0$ implies $E_{ij}=0=E_{ji}$ for all j. Note that I am adopting the convention of not treating cargo shipped *through* a port as at all part of its exports or imports. Thus, cargo going from London to San Francisco is not to be treated as both an import and export of Panama. A similar philosophy tells me that T_{ij} data have already been adjusted so that it is no longer cheaper to send cargo from i to j via a third port k: such an "indirect" route would already have been defined to be the cheapest direct route and by our convention the port k would not be explicitly involved. Such preliminary adjustments of the definition of T_{ij} have made it satisfy the "Pythagorean" relations $T_{ij} \leq T_{ik}+T_{kj}$, etc.

Table II shows the relevant configuration. Note that all the numbers shown by symbol are positive: Thus $(-E_n)$ represents positive imports because algebraic exports E_n are negative for an importing country. Note that a table of T_{ij}'s is definable for *all* countries and all blocks; but with the given positive exports and imports shown in the margins of the table within parentheses, we would be interested only in the T_{ij}'s in the upper right-hand corner.

VI.—*Relation to the Koopmans Linear Programming Problem*

In this and the next section, I shall try to relate the results of our international trade problem to the newly developed theory of linear programming (defined austerely by the mathematician as "the maximization of a linear expression subject to linear inequalities"). For the theorist these are important sections, and to an economist who has heard about this new field and would like to get an idea of what it is all about, these will serve to indicate its general flavor. Though I have tried to use only the most elementary tools, these two sections are not summer-hammock reading; and for this reason, the remaining sections, from VIII on, have been arranged so that a reader can go directly on to them, skipping the more technical material.

Imagine now that the positive totals in parentheses $(E_1, \cdots, E_m)$ and $(-E_{m+1}, \cdots, -E_n)$ were given to us by Enke while at the same time he concealed from us the entries $E_{i,m+j}$ giving the detailed breakdowns. Then for us to find the missing numbers so as to minimize total transport cost would be precisely the Koopmans-Hitchcock problem in linear programming.[12]

How do we know that Enke's solution for E_{ij}'s does truly minimize transport cost? Since I have shown that Enke does maximize net social pay-off, and since the expressions $\sum_1^n S_i(E_i)$ in NSP of equation (3) depend only on the regional totals of exports $(E_1 \cdots, E_n)$, it follows that maximizing NSP would be impossible unless the E_{ij}'s were optimal for minimizing transport cost. Thus the Cournot-Enke problem does have inside it the Koopmans problem.[13]

* * *

[12] We minimize

$$\sum_{i=1}^{m} \sum_{j=m+1}^{n} T_{ij}E_{ij}$$

subject to

$$\sum_{j=m+1}^{n} E_{ij} = E_i \qquad (i = 1, \cdots, m)$$

and

$$\sum_{i=1}^{m} E_{ij} = (-E_j) \qquad (j = m+1, \cdots, n) \qquad E_{i,m+j} \geqq 0.$$

[13] A close analogy is the Yntema-Robinson problem of determining best outputs for a monopolist discriminating among independent markets. This includes inside it the problem of best allocating a given total output among markets.

Despite its likeness to the Kirchhoff-Maxwell quadratic maximum property of electric networks, the Koopmans problem cannot be solved by simple Kirchhoff networks unless entirely new laws of resistance can be inserted into such a network.[14] However, we can utilize the Enke network, which uses standard resistances and rectifiers, to solve any Koopmans problem. But we must work backwards: we must experimentally vary Enke's A_i's, which he puts into his network as prescribed voltages, until we achieve the requisite n totals $(E_1, \cdots, E_m, -E_{m+1}, \cdots, -E_n)$.[15] We can read off the required interregional exports as electric currents from the resulting Enke analogue network.

The above method is of interest because it suggests that any linear programming problem may be solvable as an unconstrained extremum problem provided we can imbed it in a suitably generalized problem.[16] Since the Air Forces and Bureau of Standards have set up their electronic calculators so as to solve transportation problems in relatively short time, there is no need to pursue the computational advantage of analogue networks any farther here.

VII.—*Equilibrium Prices and the Dual Problem*

The equilibrium prices as given by equations (4) arise naturally in the Enke problem but are completely absent from the initial formulation of the transport problem. However, as an economist, Koopmans sought to introduce some kind of price mechanism into the calculation

[14] See *Activity Analysis*, p. 259.

[15] This can always be done. The theory of the "dual problem" in linear programming assures us that there exists a set of parallel shifts of the excess-supply curves that will bring about any prescribed E_i configuration. The slopes of the excess-supply curves, Enke's b's can be arbitrary positive numbers. The procedure here described has the drawback of involving in effect a need to solve a set of simultaneous equations between the A's and E's. This might be mechanized by servomechanisms. (Query: does the "dual network" to Enke's solve the "dual problem" of linear programming?)

[16] Thus, if we use ordinary matrix notation and are given m arbitrary c's and $m(\geqq n)$ arbitrary x's, suppose we seek to maximize $Z=b'x$ subject to $Ax=c$ and $x\geqq 0$. Then for any nxn positive definite matrix B, there exists an n-vector v such that

$$Z^* = c'Bc - v'c + b'x = x'A'BAx - v'Ax + b'x$$

will be at a maximum for $x\geqq 0$ only if $Ax=c$. Having somehow found such unknown v's, we can solve Z by solving Z^*, an unconstrained extremum problem. For special A's and B's this can be converted into a simple analogue network problem. In every case we can solve the dual problem by taking proper combinations of the optimal derivatives of Z^*. Actually Z^* need not be quadratic but can be more general. A natural generalization of the Koopmans problem would be to have the flow of shipments vary directly with the marginal costs of transport $T_{ij}+P_i-P_j$. This would differ from the Enke problem in that E_i would then be a function of all P's and not of P_i alone. Dr. Martin Beckmann has written a number of interesting Cowles Commission Memoranda dealing with the case of continuous markets located everywhere in the plane. The partial differential equations of equilibrium correspond very closely to those of the Koopmans problem and a potential function plays a similar rôle. For the continuous case too, we can imbed the problem into a more general situation in which there is an excess-supply function at every point.

and he did succeed in defining a set of prices or potentials that correspond to our s_i's and P_i's. In doing this he was guided by economic and electric analogies and he was able to anticipate the mathematicians' theories of what is called the "dual problem" in linear programming. Mathematical theory assures us that every minimum problem in linear programming can be, so to speak, turned on its side and can be converted into a related maximum problem. The answer to this maximum problem also gives the correct answer for the quantity that was to be minimized.

For sake of brevity I shall simply refer the reader to the theory of linear programming for interpretations and proofs of the following remarks: (1) The P's or s's of equation (4) are the dual variables to the E_{ij}'s of the transport problem;[17] (2) $P_i - P_j$ can be interpreted in the Koopmans problem as an element of indirect marginal cost to be added to direct marginal cost T_{ij}—this term takes into account the money advantages of having an empty ship at j rather than at i; (3) If we change some E_i's, then the resulting increase in total transport cost is related to the P's; (4) Pricing in a competitive market could conceivably keep a system in the proper optimal configuration.[17a]

[17] Defining the profitability of any export from i to j as $\pi_{ij} = P_j - P_i - T_{ij}$, then for all $\pi_{ij} \leqq 0 \leqq P_k$, the maximum of $Z = -\sum P_k E_k$ will equal the minimum achievable transport costs. For any $\pi_{ij} < 0$, $E_{ij} = 0$, and for any $E_{ij} < 0$, $\pi_{ij} = 0$. Z can be rewritten $\sum\sum E_{ij}(P_j - P_i)$ so that we can think of the problem as that of finding the price differentials that will maximize the total *gain* in value of amounts shipped, subject to non-positive profitabilities on each shipment. It may be mentioned that only price differences are determinate and that the "dual variables" corresponding to export regions are related to their prices.

[17a] The present techniques, generalized in the manner indicated by cited work of Beckmann, can be used to throw light on many of the problems arising in connection with the basing point controversy. Oligopolists selling a homogeneous product want some pattern of pricing that will lead to a single *unambiguous price* at any geographical point. Usually, too, the pattern must be such as to lead to a not-too-obviously-wasteful flow of transport, and it must provide for a fairly stable and not-too-lopsided sharing of the market by the different producers. Historically, so long as most production is in fact concentrated in one advantageous place, such as Pittsburgh, a single basing pattern meets these criteria and is not too inefficient. Such a pattern of course encourages consumers to move toward the base; but to the extent that customers do not move, it encourages producers to move out toward them so as to receive in the form of higher net prices the transport costs saved or "phantom freight."

In any case, in a dynamic world any one locality will usually lose its dominant advantages in time and many plants will be operating away from the single basing point. Consequently, the system will lead increasingly to an inefficient pattern of transport and will become increasingly vulnerable to public criticism and to competition. A multiple basing point system may then come into effect and this will represent a compromise between FOB pricing and delivered pricing: within each region, the basing point pattern will prevail but at the shiftable boundaries of the regions there may be price competition between regions.

The requirements for the regional pattern of prices and flow of commodities is so strictly determined by perfect-competition assumptions that it is easy to show how basing point patterns deviate from the spirit and the letter of the competitive pattern: thus when producers all over the country respect a single basing point pattern, the contour lines of equal-delivered-price surround the basing point in a manner superficially similar to a perfect-competition pattern; but the flow of transports is *not* perpendicular to the contour lines of price and so we instantly detect the absence of perfect competition. For any given pattern of producer and con-

VIII.—*Illustrative Case Study*

A numerical example may help to clarify the theoretical relations. Unless there are at least four regions, no problem of optimizing the pattern of exports can arise. So consider regions I, II, III, IV characterized by the following transport costs (in $ per unit of shipment).

A

$$\left[\begin{array}{cc|cc} \cdot & T_{12} & T_{13} & T_{14} \\ T_{21} & \cdot & T_{23} & T_{24} \\ \hline T_{31} & T_{32} & \cdot & T_{34} \\ T_{41} & T_{42} & T_{43} & \cdot \end{array}\right] = \left[\begin{array}{cc|cc} \cdot & 9 & 8 & 7 \\ 4 & \cdot & 4 & 1 \\ \hline 5 & 1 & \cdot & 5 \\ 6 & 2 & 6 & \cdot \end{array}\right]$$

Let us suppose that initial local conditions of demand and supply are such as to make Regions I and II exporters and III and IV importers. Suppose further that I initially exports only to III while II exports to both III and IV. In that case the data in the upper right-hand block of the transport cost array are alone relevant. The resulting export shipments are perhaps as shown in the following table:

B

Regions	III	IV	Exports	Local Price
I	38	0	(38)	($10)
II	2	50	(52)	$14
Imports	(40)	(50)	90	
Local Price	$18	$15		

If only the data in parentheses in Table B were given, we could from the cost data in Table A deduce the remaining numbers in B. To do so

sumer location and observed flow of product, linear programming permits us to calculate the optimal minimum cost of transport and to compare it with the actual.

The optimum pattern never permits of overlapping markets of differently located plants; so it is obvious that an omnipotent combine of oligopolists would never use the arbitrary pattern of price discrimination implied by basing points. Nonetheless, there is nothing at all surprising about the use of this pattern; for after all an omnipotent combine of oligopolists would not engage in competitive advertising and many other things which we expect actual imperfect competitors to engage in. Except in times of formal or informal price control, imperfect competitors customarily administer their prices at more than marginal cost; and since perfect non-discrimination is only one out of an infinity of patterns, we should not be at all surprised by the existence of price discrimination. Moreover, contrary to some views in the literature, the pattern of price discrimination implied by adhering to basing point formulas is *not* particularly a strange or arbitrary one: it can be shown to presuppose that the elasticity of demand of customers for the delivered output of the basing point mills increases slightly with distance from the basing point, an assumption that no one would defend as exact but also an assumption that no assistant vice-president would be motivated to denounce strongly. Under oligopoly the most precious of all devices are those that lead to an informal consensus and the basing point system has the great virtue that within a region it reduces the whole pattern of pricing *to a single unknown*, around which sentiments can form and in terms of which mere price-competing is obviated.

we would have to solve the Koopmans problem and its so-called dual problem; however, in solving the more general Enke problem, all P's would already have been determined by supply and demand conditions, as would have all the unknowns of the problem.

To understand the necessary pattern of price, Figure 5a is useful. It represents what the mathematical topologist calls a "tree," and it shows the flow of exports by means of arrows. Note that all four markets are connected and that competition will freeze all P's as soon as any one P in the tree is known.

FOUR-REGION TRADE EQUILIBRIA

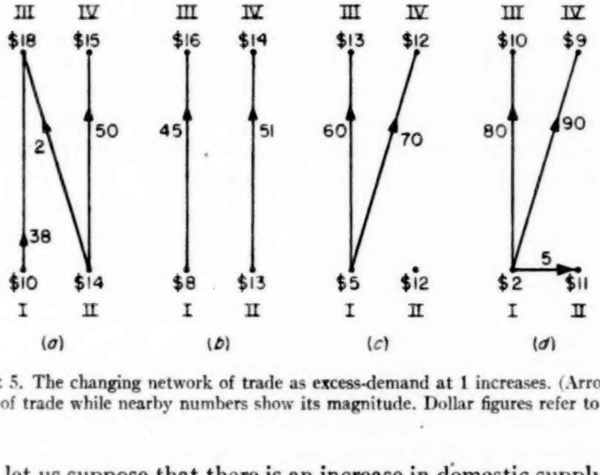

FIGURE 5. The changing network of trade as excess-demand at 1 increases. (Arrows show direction of trade while nearby numbers show its magnitude. Dollar figures refer to regional prices.)

Now let us suppose that there is an increase in domestic supply and a decrease in domestic demand in I, so that I's excess supply function increases. It will be shown in the next section that this must depress P_1. At first, therefore, the *qualitative* pattern of trade will be unchanged; and hence, all P's must decrease by exactly the same amount as P_1 decreases. (Incidentally, algebraic exports of *all* other regions must at first go down if their markets are to be cleared.)

However, if the excess-supply function at I increases enough, region II's export market to III may be completely captured by I. This case is shown in Figure 5b. Our tree has now split off into two trees, or what the mathematician calls a "forest." Now P_2 and P_4 are interconnected but they are independent of P_1 and P_3. This is called the case of "degeneracy" in the theory of linear programming, and its theory is well understood.[18] From this point on further increases in excess-supply at I

[18] This "degeneracy" is not quite the same thing as the following phenomenon: there may for some E's be more than one optimal trade pattern, with choice between the different optima

will depress P_1 and P_3 equally but will leave P_2 and P_4 unchanged, and will not affect exports or consumption in those regions.

But if excess-supply in I increases by still more, it will finally so depress P_1 as to permit I to capture II's remaining export market in IV. II is now isolated as in Figure 4c, which shows a lopsided forest. In this region P_1, P_3, and P_4 all fall equally, and imports of III and IV gradually increase. P_2 and II's consumption remain unchanged, with her export remaining zero.

In the ultimate stage shown by Figure 5d, excess-supply increases so much in I that we again have a tree. I has become an exporter to everybody; all prices are from now on locked together and go down equally.

To clinch his understanding of the principles here shown, the reader should draw the diagrams that would precede Figure 5 as the excess-supply function in I is *reduced*. He can show how all P's rise together until I ceases to export and becomes isolated; how all other P's then remain unchanged, until finally I becomes an importer from II and a tree is formed; still further increases in P_1 will finally cause III and IV to become exporters to I rather than importers, finally putting I in the ultimate importer stage. The reader may also experiment with *ceteris paribus* shifts in excess-supply in some other region. If he rigorously specifies a local excess-supply curve at each point, he can rigorously work out the equilibrium solution at each stage; however, it will be a sufficient test of his understanding if he can correctly infer the qualitative direction in which P's and E's must shift.

IX.—*Comparative Statics*

We can now cash in on our success in converting the spatial equilibrium system into a maximum problem: for such systems it is easy to make rigorous predictions as to the qualitative direction in which the variables of the system will change when some change is made in the data of the problem.

Let me begin with a simple case. Suppose the transport cost rises between i and j. What effect will this alone tend to have on the trade pattern? I think anyone will guess that, however other variables may change, exports from i to j must certainly decrease or at worst remain

being a matter of indifference. Thus, Koopmans, *op. cit.* p. 253, has called attention to the following kind of a situation: shipments from London to San Francisco meet shipments from New York to Honolulu in Panama; provided we are dealing with homogeneous shipments of wheat or empty vessels, it is obviously *indifferent* whether we reroute some of the London-Frisco shipments to Honolulu—provided an equal and opposite rerouting of New York cargo is simultaneously made. The cost data of Table A provide such an example when III is exporting say 15, IV exporting 30, I importing 25 and II importing 20. It then becomes a matter of indifference as to how III's exports are divided between I and II, provided that IV's shipments compensate. Professor Robert Solow points out to me that creating a fictitious set of two intermediate ports—V' which receives 45 and V'' which exports 45—will get rid of the indeterminacy.

the same; such exports can certainly not increase.[19] This happens to be a correct conclusion. But how can we be sure that our intuition is correct in a system that may involve hundreds of unknowns? The analytic theory of maximum systems worked out in my *Foundations of Economic Analysis* provides us with just such assurance.

And as a matter of fact, if we try to discover why our intuition suggested the answer it did, we will discover, I believe, that we have consciously or unconsciously been already identifying the system with a maximum and we have been heuristically inputing teleology and wisdom into the system. Again, this happens to be a rigorously correct procedure once the system has been rigorously identified as a maximum one. Indeed, in the physical sciences, the somewhat mystical principle of Le Chatelier, which says that a system tends to react to a stress so as to minimize and counter its effects, is just such a heuristic teleological principle and derives its validity from the maximum conditions underlying thermodynamic equilibrium.

* * *

A more interesting application of the above kind of analysis is provided by the problem of a shift in the excess-supply function at one place alone, say at region 1. Our intuition tells us that an increase in excess-supply at 1 should cause total exports from that region, E_1, to grow.

There is no loss in generality in assuming that the shift in the excess-supply function at 1 is a parallel vertical shift, so that we simply subtract a constant a_1 from the $s_1(E_1)$ expression in order to give the excess-supply curve the desired rightward and downward shift, with more being supplied at every price. Previously our net social pay-off could be written as a function of E_1 and other variables. This is still true, but now in the expression for *NSP* there will be an additional term $+a_1E_1$. The interested reader may be referred to Chapter 3 of *Foundations of Economic Analysis* for a full statement of the reasoning. It is enough to state here that the algebraic sign of the change in E_1 with respect to a change in a_1 must then be positive, or at worst zero. This rigorously confirms the conjecture that an increase in excess-supply at any point tends to increase the algebraic exports of a region and decrease its algebraic imports.

(1) How will such an increase in excess-supply affect price at 1? (2) How will it affect prices everywhere else? (3) How will it affect algebraic exports, E_i, everywhere else? Our intuition does not respond so easily to these further questions. But anyone who has worked through

[19] In the Enke formulation of the problem, the total E_i's are not held constant: they are changing as they must to restore the equilibrium. Of course, a similar theorem can be stated in the Koopmans case: an increase in T_{ij}, with all E_i's constant, can never increase E_{ij}.

the numerical example of the previous section will be able to make some fairly shrewd conjectures.

First, we would guess that an increase in excess-supply at 1 will depress P_1. Surprisingly, this turns out to be quite difficult to prove. For the result does not depend upon what happens at 1 alone, and no amount of graphical shifting of the curves in the 1 market can be relied upon for valid inferences. If region 1 were self-contained, an increase in its positively sloping excess-supply curve would certainly have to depress its price in order to get the market cleared. But in the previous paragraph, we have already seen that the net exports out of 1 have gone up, which by itself tends to relieve the redundancy of local supply and to increase rather than depress the local price. Which effect will be larger—the direct depressing effect on P_1 or the indirect upward effect on P_1 of the increased exports?[20]

The correct answer tells us that the final effect on P_1 of enhanced excess-supply at 1 *must* be downward. But how do we know that this is the correct answer? Not, I think, by simple maximum reasoning alone. The following considerations are more rewarding: (1) How does region 1 "force" an increase in its exports on the rest of the world if its price does not actually fall? Surely P_1 must decline or we shall have a contradiction to the rigorously proved result that 1's exports do go up. (2) As to the change of all other P's, how does the rest of the world absorb extra algebraic imports unless prices there have "on the whole" fallen?

Actually, our previous numerical example and the theory of the dual problem in linear programming show us that very stringent conditions must be satisfied by the network of prices in spatial equilibrium. Consequently, a much stronger result can be asserted:

> An increase in excess-supply at 1 must have a downward effect on every single price, or at worst leave it unchanged. The downward effect on other prices cannot exceed the downward effect on its own price: for all regions that stay continuously connected by direct or indirect trade with 1, the changes in P_i must exactly equal the drop in P_1; but any regions that at any time remain disconnected from 1 (as in Figure 5b above) the change in P's will be less than the drop in P_1. And so long as we assume "normal" positive sloping excess-supply curves everywhere, we can confidently assert that an increase of excess-supply in region 1 must decrease algebraic exports everywhere else, or at worst leave some of them unchanged.

The proof of these statements can be supplied in a straight-forward fashion by anyone who has mastered the reasoning of the previous

[20] Mathematically, $P_1 = -a_1 + s_1(E_1)$ so that $dP_1/da_1 = -1 + s_1'(dE_1/da_1)$. These last two terms are of opposite sign so the final sign is in doubt.

numerical example relating to spatial price equilibrium. One of the remarkable features of the present model is the fact that economic intuition will lead to correct inferences in a system involving complex interdependence between any number of variables.[21]

X.—*Generalized Reciprocity Relations*

One last relation concerning reciprocity may be mentioned. Consider the effect on E_j of a unit change in the excess-supply curve at i. And let us compare it with the effect on E_i of a unit change in the excess-supply function at j. Qualitatively, these two effects have been shown to be of the same sign: increased excess-supply at any one point tends to decrease algebraic exports at any other point. We may, however, state a much more astonishing truth: a change in i's excess-supply function has *exactly the same quantitative effect* on E_j that a change in j's excess-supply function would have on E_i.

This reciprocity condition follows immediately from the maximum nature of the problem. Similar relations are known to hold in the field of physics due to the work of Maxwell, Rayleigh, and others. In the economic theory of consumer's behavior similar "integrability conditions" play an important rôle, as has been recognized by Slutsky, Hotelling, H. Schultz, Wold, Houthakker, and others.

I do not imagine that many people would be able to have derived such quantitative relations by intuitive reasoning. Nonetheless, these should not be regarded simply as some rather amusing and paradoxical relations turned up by mathematical reasoning. From a deeper methodological viewpoint, the way that we may test whether a given set of observations has arisen from a maximizing or economizing problem is

[21] Perhaps some theoretical economists will feel that the answer to the effect on P's of an increase in 1's excess-supply should have been immediately deducible from the J. R. Hicks stability conditions of *Value and Capital* (Oxford, 1946), Chaps. 5 and 8 and their appendixes. As far as the effect on P_1 itself is concerned, we must beware that we are not simply rewording the problem: "imperfect stability" is a definition and we must answer and not beg the question of whether the concrete specified Enke-Cournot system does or does not enjoy the property of being at least imperfectly stable. The problem is not quite so hopeless as this may sound, in view of the recognition in the 1946 edition of *Value and Capital* of the sufficiency of a maximum position to guarantee perfect and imperfect stability in a wide variety of cases. The present example is *not* directly one such case but it should be possible to make the necessary extensions to the theory so that it would be able to handle cases like the present. Among other things, the present example has the interesting feature of involving functions with corners where no derivatives can be uniquely defined and yet the important logical relations of a maximum position still prevail.

In connection with answering the question of the effect on prices other than P_1, problems of "complementarity" rather than stability are involved. The fact that all P's change in the same direction is related to the Mosak theorem concerning systems in which all goods are substitutes. J. L. Mosak, *General-Equilibrium Theory in International Trade Theory* (Bloomington, 1944) pp. 44, 49–51. Similar matrices have been studied by Leontief, Machlup and Metzler, Frobenius, Minkowski, Hawkins-Simon, Woodbury, Markoff, *et al.*, as discussed in a forthcoming paper by Robert Solow.

in terms of such reciprocity relations.[22] To me, one of the most interesting of the present problems is the fact that the fundamental reciprocity relations implied by a maximum problem turn out to transcend the case where partial derivatives exist.[23]

XI.—*Conclusion*

The problem of interconnected competitive regional markets is one of the rare cases where a reasonably simple and self-contained theoretical treatment is possible. It is a good case to demonstrate the powers of the theory of linear programming since it enables us to give rigorous proofs to plausible conjectures. It so happens that much of the literary discussion of the effects of tariffs and of exchange depreciations is, in the first instance at least, couched in terms of just this model. Thus when a journalist or economist tells you that depreciation of the pound will tend to increase U.K. exports to the United States, to decrease U.K. imports, and to raise pound prices on both categories of goods while depressing dollar prices on them, he is either repeating from memory what someone has worked out from a Cournot-type model or he is himself thinking in terms of such a model.[24] Needless to say, the partial equilibrium assumptions involved in the domestic demand schedules and the neglect of aggregative relations constitute a serious defect of such a model except as a rough first approximation to the answers in especially favorable cases. Good economic theory will recognize these limitations rather than be predisposed to neglect them.

[22] See Henry Schultz, *The Theory and Measurement of Demand*, Chicago, 1938, Chaps. I, XVIII, XVIX.

[23] A more general theory shows that even at corners, where partial derivatives are not uniquely defined, we can extend the definition of a derivative to include all the admissible slopes of "supporting lines or planes" and then generalized reciprocity relations of the following type hold. Plot E_j against a_i and also plot E_i against a_j. The former curve may at some points have a corner so that its generalized partial derivative is anything between, say, $-.33$ and -5.92. It will then turn out that the second curve must also have a corner at the point corresponding to the corner of the first, and its range of indeterminacy of slope must also be between $-.33$ and -5.92. Analogous relations hold in many variables. Thus, within the field of linear programming there exist quite a number of natural generalizations of the relationships that hold for regular differentiable functions.

[24] For elaborations and criticisms see G. Haberler, "The Market for Foreign Exchange and the Stability of the Balance of Payments," *Kyklos*, Vol. III (1949), pp. 193–218; J. Viner, *Studies*, Chicago, 1938, pp. 590–91. Mention should also be made of work by Yntema, Joan Robinson, J. J. Polak, and others.

OUR CHANGED POPULATION OUTLOOK AND ITS SIGNIFICANCE

By Joseph S. Davis*

The population of the continental United States has radically changed in numbers, age composition, and marital composition since 1940. Numbers alone increased by about 25.1 million in the 12½ years from September 1, 1939 to March 1, 1952. The most striking increases were in young children under 5, 10, and 15 and in persons 65 and over. The number of married couples has greatly risen while the proportion of single persons 14 and over has impressively declined. More important, accumulating data leave no room for doubt that our population outlook has undergone an astounding if not revolutionary reversal in 1947-52.

American demographers, official and unofficial, are increasingly recognizing these facts,[1] although they have been slow to acknowledge the upset of their best forecasts and their firmest convictions, and are naturally reluctant to go on record with revised ones. But the character and extent of the changes, and their profound economic and social significance, are not yet generally realized in academic and business circles. Obsolete views based on obsolete data are common in text and reference books in current use, and keep appearing in new scholarly books, articles, book reviews, and manuscripts. In the social sciences there is a serious lag between exposure of significant error and its correction in

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[1] Significant references include: Jacob S. Siegel and Helen L. White, *Illustrative Projections of the Population of the United States, 1950 to 1960*, Bur. Census, Ser. P-25, No. 43, Aug. 10, 1950; Harold F. Dorn (Nat. Inst. of Health), "Pitfalls in Population Forecasts and Projections" (read at association meetings, Dec. 28, 1949), *Jour. Am. Stat. Assn.*, Vol. LXV (Sept., 1950), pp. 311-34; Margaret J. Hagood and Jacob S. Siegel, "Projections of the Regional Distribution of the Population of the United States to 1975," *Agr. Econ. Res.* (Bur. Agr. Econ.), Vol. III (Apr., 1951), pp. 41-52; Frank W. Notestein, "Population," *Scien. Amer.*, Vol. 185 (Sept., 1951), pp. 28-35; Louis I. Dublin and Mortimer Spiegelman, "Health Progress Among Industrial Policy Holders, 1946 to 1950," *Soc. Actuaries Trans.*, Vol. III (Sept., 1951), pp. 294-328 (the Metropolitan Life Ins. Co. *Stat. Bull.*, for which they are primarily responsible, has in recent years amply recognized the change); Henry S. Shryock, Jr., "Redistribution of Population: 1940 to 1950" (read at association meeting, Dec. 27, 1950), *Jour. Am. Stat. Assn.*, Vol. XLVI (Dec., 1951), pp. 417-37; P. K. Whelpton and J. V. Grauman, "Population: Prospects and Problems in 1960," *Dun's Rev.* (Jan., 1952), pp. 13-14, 60-74; Clyde V. Kiser, "Fertility Trends and Differentials in the United States," *Jour. Am. Stat. Assn.*, Vol. XLVII (Mar., 1952), pp. 25-48.

professional literature and university classrooms. In this area of fundamental importance for much economic analysis, the economic journals have hitherto contributed almost nothing to overcome the lag.

Though government and business economists are more alive to the changes, Drucker recently went so far as to say:

> In every important respect—in total numbers, in age distribution, and in employability—the actual development of our population is almost the exact opposite of that on which many managements, largely without conscious realization, base their capital investment, their product development and marketing, and their employment practices.[2]

The 1950 annual report of the Bank for International Settlements contains this striking sentence: "It has proved singularly difficult . . . to liberate men's minds from the hold which prewar ideas and policies had obtained over them."[3] This is emphatically true in the limited field here under consideration.

The primary purpose of this article is to summarize the evidence of the population changes that have already occurred, in contrast with expectations of the foremost experts, and to indicate what can—and what cannot—be reasonably asserted about further developments in the next few decades.[4] A second purpose is to bring out important aspects of the significance of the new outlook as compared with the old, without pretending to exhaust this topic. If economists will only catch up and keep up with the basic demographic evidence, they will find manifold applications in their individual work. I have deliberately refrained from speculations about our "ideal population" or the state of the American economy and society in 1980 or 2000, to say nothing of extending my range to include the rest of the world; and I have not attempted to deal convincingly with questions about our ability to produce what the much larger population in prospect will want to consume.

Changes in Position and Outlook

The conviction that the United States population would soon reach a virtual peak, and either table off or more probably decline, gained

[2] Peter F. Drucker, "Population Trends and Management Policies," *Harvard Bus. Rev.*, Vol. XXIX (May, 1951), pp. 73-88. See also his earlier popular article, "Are We Having Too Many Babies?," *Sat. Eve. Post*, May 6, 1950, pp. 40ff.

[3] *Fed. Reserve Bull.*, Vol. XXXVII (Sept. 1951), p. 1107.

[4] This paper, containing important fresh evidence, is essentially a sequel to my condensed monograph, *The Population Upsurge in the United States* (Food Research Inst. War-Peace Pamph. 12, Dec. 1949). Three other papers in 1949-50 grew out of the same study: "Our Amazing Population Upsurge," *Jour. Farm Econ.*, Vol. XXXI (Nov., 1949), pp. 765-78; "Agriculture and the New Population Outlook" (Nat. Agr. Credit Com., Jan. 30, 1950, mimeo.); "Fifty Million More Americans," *For. Affairs*, Vol. XXVIII (Apr., 1950), pp. 412-26.

ground in the 1920's and became general by the end of the 1930's.[5] The long-term decline in the birth rate was accelerated in the 1920's and 1930's. Births as well declined between 1924 and 1936; immigration dried up in the 1930's; and the crude death rate of our "aging population" seemed to be approaching a minimum from which it could only rise. One of the favored forecasts of 1938 (Chart 1, *ml0*) put our peak population below 140 million, to be reached about 1960; another put it at about 154 million (*mm0*), to be reached about 1980.[6] Actually, the lower figure was passed in mid-1947, the higher in mid-1951. These and later forecasts rested on trend analyses and extrapolations that time has proved thoroughly unsound.

The same conviction persisted in the 1940's, though revisions were made in detailed projections and forecasts in 1943, 1946-47, and early 1949. As late as 1947 one leading authority (Whelpton) viewed the prospective decline optimistically: he considered our "economic optimum" population well below the current level, perhaps as low as 100 million.[7] Another (Baker) viewed with alarm the prospect, as he sized it up, that our population might fall to 100 million within a century, if not by the year 2000.[8] As late as mid-1950, the standing official estimate of our *peak* population was 165 million, and a decline before this

[5] Of the long series of possible references, six will suffice: Raymond Pearl and Lowell J. Reed, "On the Rate of Growth of the Population of the United States since 1790 and its Mathematical Representation," *Proceedings Nat. Acad. Sci.*, Vol. VI (June, 1920), pp. 275-88; Louis I. Dublin, ed., *Population Problems in the United States and Canada* (Boston, Houghton Mifflin, 1926); Warren S. Thompson and P. K. Whelpton, "Population Trends in the United States," *Recent Social Trends in the United States* (New York, McGraw-Hill, 1933); Lowell J. Reed, "Population Growth and Forecasts," *Annals Am. Acad. Pol. and Soc. Sci.*, Vol. 188 (Nov., 1936), pp. 159-66, esp. p. 163; Nat. Research Com., Com. on Population Problems, *The Problems of a Changing Population* (Washington, May 1938); P. K. Whelpton, *Forecasts of the Population of the United States, 1945 to 1975* (Bur. Census, 1947).

[6] The letters *m*, *l*, and *h* mean medium, low, and high respectively. The first letter in a series such as *m l 0* refer to assumed mortality rates, the second to assumed fertility rates. The figures *0*, *125*, etc., refer to the assumed number of thousands of net in-migrants per year—including returned citizens, foreign visitors, and migrants from Puerto Rico and other outlying territories, none of whom can properly be termed "immigrants."

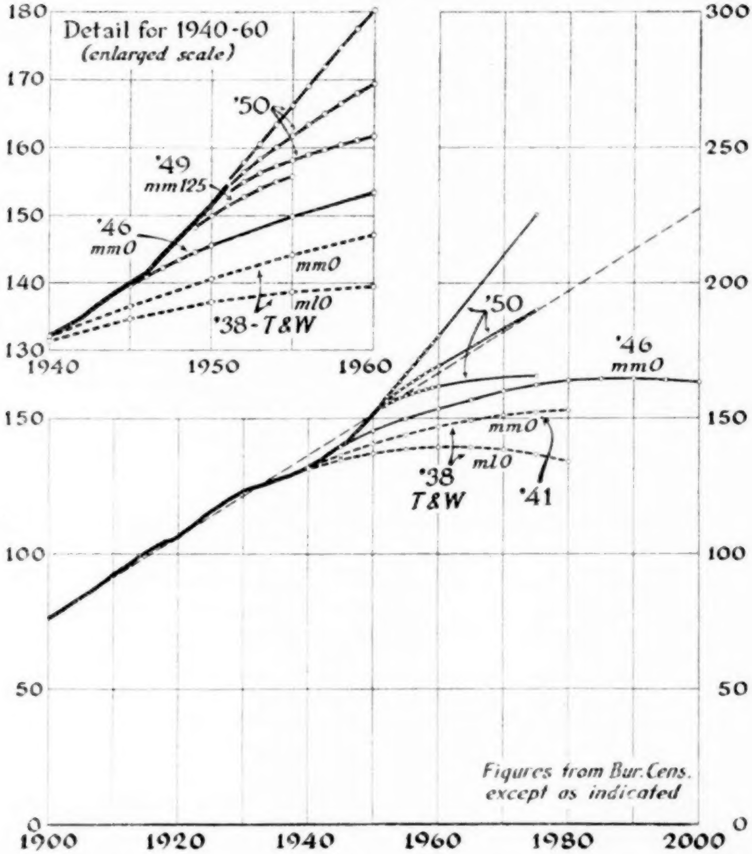
The *'38—T and W* projections are those of Thompson and Whelpton, in *The Problems of a Changing Population*, cited in footnote 5; the Census Bureau published the *'38 m m 0* projection as its own *'41* forecast in *Current Population Reports*, Ser. P-3, No. 15, July 23, 1941. The *'46* projection was the Census Bureau's advance publication (Ser. P-46, No. 7, Sept. 15, 1946) of one that later appeared in Whelpton, *Forecasts*, cited in footnote 5. The *'49* projection was the Census Bureau's own, given in Ser. P-25, No. 18, Feb. 14, 1949. The *'50* projections are in Siegel and White, cited in footnote 1.

[7] Whelpton, *Forecasts*, p. 64.

[8] O. E. Baker, "The Population Prospect in Relation to the World's Agricultural Resources" (address at Columbus, Ohio, Dec. 27, 1946, before National Council of Geography Teachers).

CHART 1.—UNITED STATES POPULATION, 1900-51, WITH SELECTED PROJECTIONS TO 1960, 1975, AND 2000[a]

(Million persons)



[a] Latest revised official estimates of the mid-year population of the continental United States, including armed forces overseas, are indicated by the heavy solid line. The thin dashed line merely connects points for 1900 and 1950 and is extended to 2000. The other lines indicate selected projections. Sources of these, with interpretative comments, are given in footnote 6.

While this article was being set up in type, the Census Bureau released a "provisional revision" of these projections for July 1, 1953-60. *Current Population Reports,* Ser. P-25, No. 58, Apr. 17, 1952.

century's end was indicated.[9] These convictions, forecasts, and opinions are now wholly obsolete.

Chart 1 shows a continuous curve (heavy solid line) representing standing estimates of the population of the continental United States annually as of July 1, 1900-51. In this period the population roughly doubled. A bulge appears in the 1920's, a flattening in the 1930's, and a striking upsurge in the 1940's that is not yet terminated. The decennial rate of increase in 1940-50 was as high as the average in 1900-50. The rate of *natural* increase (excess of births over deaths) in the 1940's was similar to that in the two decades centering in 1900. And the annual rates of increase in 1947-51 were not far below those of 1900-10, when immigration was relatively far greater.

Chart 1 also shows two favored projections (*ml0* and *mm0*) published in May 1938, the Census Bureau forecasts of July 1941 and September 1946 (both *mm0*), and the Bureau's three "illustrative projections" to 1960, which in August 1950 replaced the standing official forecast.[10] Of these latest only the low projection, based on assumptions that now seem unrealistic, fits roughly with the former *forecasts.* The medium projection, as "unofficially" extended by the Census Bureau to 1975, points to 190 million in that year.[11] Our actual population growth since mid-1950 more nearly approaches the growth indicated by the high projection,[12] which points to 225 million in 1975—though some of its assumptions now seem incredible. The wide range of 60 million between the low and the high projections for 1975 reflects chiefly the utter inability (only recently acknowledged) to forecast births beyond a year. The Census Bureau now wisely avoids use of the term forecasts, and rightly refrains from stressing the medium projection.

The extent of the reversal of earlier expectations is underscored by the fact that our population increase in 1940-50 (July 1 basis, including armed forces overseas) was 19.6 million, whereas Hansen, in his impressive address of December 1938, had confidently expected it to be only 5-6 million.[13] The Census Bureau forecast of mid-September

[9] The curve shown on Chart 1 as *'46 mm0*, which was not formally disavowed even by the new official projections of Aug. 10, 1950.

[10] Siegel and White, *op. cit.*, p. 7 (including armed forces overseas).

[11] Hagood and Siegel, *op. cit.*, p. 47 (excluding armed forces overseas).

[12] True through February 1952, the latest month for which data are yet available. The actual increase in July-June 1950-51 was 2,664,000, as compared with 2,343,000 indicated by the mid-1950 medium projection and 2,874,000 by the high projection. The official forecast of early 1949 (*mm125* basis) had indicated an increase of only 1,513,000 in 1950-51. The official 1946 forecast had pointed to an increase of 4,380,000 in 1950-55.

[13] Alvin H. Hansen, "Economic Progress and Declining Population Growth," *Am. Econ. Rev.*, Vol. XXIX (March, 1939), pp. 1-15, See *'38 ml0* curve on Chart 1.

1946 indicated an increase of 4.6 million in the four years ending June 30, 1950. The actual increase was more than twice as large. The Bureau's estimates released on February 14, 1949 pointed to an increase of 5.2 million in the three years ending June 30, 1951. The actual increase was nearly 50 per cent larger.

In this wholly unexpected and remarkably protracted recent upsurge, three factors all contributed: net in-migration substantially exceeded the forecasts, deaths fell below the numbers assumed, and births far outstripped the expected figures.

Net in-migration was generally ignored in the favored projections of 1937-47, though Whelpton was inclined to prefer the assumption of 100,000 per year. The annual average for the decade 1940-50 was 160,000.[14] The Census Bureau forecast of February 1949 assumed an average of 125,000 a year, or a total of 1,000,000, in the *eight* years ending July 1, 1955. The actual total in the first *three* of these years was nearly 1,000,000.

Despite the hazards of war, deaths in the calendar years of 1940-45 continued on much the same absolute level as in the preceding 30 years, with a peak in 1943 far lower than that in the influenza year 1918. Despite special hazards attending the high birth rates of 1946-51, and disproportionate increases in numbers of the elderly and aged, deaths in these six calendar years were only moderately higher (Chart 2). The crude death rate in each of the four years 1948-51 was under 10 per 1,000. The age-adjusted death rate continues to decline, and in 1950 was less than one-half of that in 1900. Two leading authorities recently went so far as to assert that "no serious student of mortality would guess when the death rate would reach a minimum and what it would be."[15]

The most striking contrast between expectations and events, however, was in the number of births. The latest revised estimates are shown in Chart 2 and the accompanying table on page 311, which also shows crude birth rates for 1909-51.

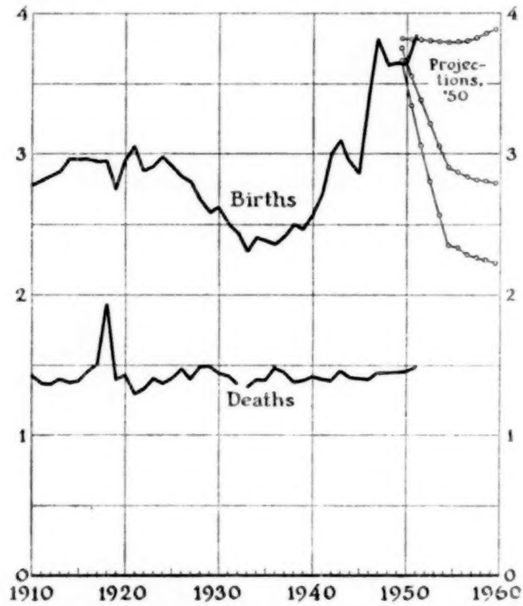
In both the fairly prosperous decade of the 1920's and the depression decade of the 1930's birth rates and births declined to very low levels. Demographers counted upon the downtrend to continue, though at a slowing rate. Our involvement in World War II was expected to alter the course of births but, on the whole, to accentuate the downward "trend." When the war years showed instead a marked increase in births and birth rates, this was interpreted in part as "catching up with arrears" due to the depression, and in part as "borrowing from the

[14] Shryock, *op. cit.*, p. 429, speaking of "net civilian immigration."

[15] Dublin and Spiegelman, *op. cit.*, p. 296.

future" or advancing the timing of births otherwise to be expected. After hostilities ended, a postwar peak in births was correctly anticipated, but the 1947 figure proved very much higher than was forecast. This peak was confidently expected to be followed by a sharp and persistent decline to and below the level of the 1930's, and any deferment

CHART 2.—BIRTHS AND DEATHS IN THE UNITED STATES, CALENDAR YEARS 1910-51, AND "ILLUSTRATIVE PROJECTIONS" OF BIRTHS, 1949-50 TO 1959-60[a]



[a] Births data in accompanying table. Projections data from Siegel and White, *op. cit.*, p. 5. Deaths data for 1910-32, adjusted for underregistration, from Thompson and Whelpton, *op. cit.*, p. 234; and from 1933, unadjusted, and excluding deaths in armed forces overseas, from annual and monthly publications of the National Office of Vital Statistics.

Revised projections for years ending June 30, 1953-60 are given in the source cited under Chart 1.

of this drop was expected to increase its severity when it came. Thus far the abrupt decline has not begun, and the hypothesis remains to be tested.

The annual average of 3,663,000 births in the calendar years 1946-51 is very high—25 per cent above the prewar record plateau of 1914-24 and 54 per cent higher than the prewar trough of 1932-37. It is difficult to find any historical precedent for so marked a rise from trough to plateau of births. Even more astounding, compared with expecta-

tions, 1951 births approximately equalled the 1947 peak. The moving 5-year total of births has been rising ever since 1937.

The number of children under 5, which had been strongly expected to continue the decline of 1920-40, in April 1950 was 41 per cent above the census-year peak of 1920 and 55 per cent higher than in April 1940. It has kept rising into early 1952. Whereas children under 5 had been firmly expected to constitute a continually declining fraction of our

LIVE BIRTHS AND BIRTH RATES, ADJUSTED FOR UNDERREGISTRATION, 1909–51[a]
(Numbers in thousands; rates per 1,000 population)

Year	Number	Rate	Year	Number	Rate	Year	Number	Rate[b]
1909	2,718	30.0	1924	2,979	26.1	1939	2,466	18.8
1910	2,777	30.1	1925	2,909	25.1	1940	2,558	19.4
1911	2,809	29.9	1926	2,839	24.2	1941	2,701	20.3
1912	2,840	29.8	1927	2,802	23.5	1942	2,988	22.2
1913	2,869	29.5	1928	2,674	22.2	1943	3,102	22.7
1914	2,966	29.9	1929	2,582	21.2	1944	2,938	21.2
1915	2,965	29.5	1930	2,618	21.3	1945	2,858	20.4
1916	2,964	29.1	1931	2,506	20.2	1946	3,411	24.1
1917	2,944	28.5	1932	2,440	19.5	1947	3,818	26.6
1918	2,948	28.6	1933	2,307	18.4	1948	3,638	24.9
1919	2,740	26.2	1934	2,396	19.0	1949	3,650	24.6
1920	2,950	27.7	1935	2,377	18.7	1950	3,628	24.0
1921	3,055	28.1	1936	2,355	18.4	1951	3,833[c]	25.0[c]
1922	2,882	26.2	1937	2,413	18.7	1952		
1923	2,910	26.0	1938	2,496	19.2	1953		

[a] For 1909–34, estimates of Whelpton, Scripps Foundation for Research in Population Problems; from 1935, estimates of National Office of Vital Statistics in the Public Health Service of the Federal Security Agency. See the latter's *Summary of Natality Statistics, United States, 1949* (Vital Statistics, Special Reports, National Summaries, Vol. XXXVI, No. 1), May 14, 1951, p. 4, and sources there cited; and its Press Release FSA-D62, Mar. 6, 1952, giving revised figures for 1941–50.

[b] For 1940–46, based on population including armed forces overseas; from 1947, based on population excluding armed forces overseas.

[c] Preliminary.

total population, this fraction has been rising for nearly 15 years. The number of children under 15 was smaller in 1940 than in 1920. In 1940-50 it rose by 8 million or 24.1 per cent. *These facts are of momentous significance.*

The recovery in crude birth rates has been greatest in groups (classified by income or economic status, education, urban-rural, etc.) where the preceding fall had been greatest.[16] Our recent birth rates, though low by various standards, are very high in comparison with the specialists' expectations for the past decade, and for the next as well. All three of the Census Bureau's 1950 projections imply declining birth

[16] Kiser, *op. cit.*, pp. 25, 37-48.

rates in the 1950's—the high series from 25.5 in 1949-50 to 21.8 in 1959-60, the medium from 25.0 to 16.6, the low from 24.4 to 13.9. The average age at first marriage has declined as the number of persons married has radically risen and the percentage of persons never married has fallen.[17] Between 1940 and 1950, while our population increased by nearly 15 per cent, the number of married couples rose by 24-26 per cent.

Chart 2 also shows, by fiscal years, the number of births assumed in the three 1950 official projections to 1959-60. Together, these reflect extreme uncertainty about the course of births in the 1950's. The low projection is in line with the views that have held sway for years. The medium projection is similar but implies a slower decline to a level well above that of the 1930's. The high projection seems fantastic to most authorities, yet births since mid-1950 have run closest to this projection. The eventual curve of births in 1950-60, however, will bear no close resemblance to any of the three projections.

It is still reasonable to expect within the present decade a trough in marriages, births, and population increase, in reflection of the trough of births in the 1930's and the extent to which women have tended to marry younger in recent years. The depth and duration of this trough, however, will be greatly influenced by the health of the American economy. Sharp declines in marriages and births may occur if we experience deep depression and severe unemployment. If years of hard times should be prevented, the demographic slump will presumably be much less pronounced.

With more assurance we can expect fresh upsurges in marriages and births beginning sometime in the 1960's and extending well into the 1970's, unless these should be repressed by seriously unfavorable economic conditions. These coming demographic swings deserve prominence in our attempts at analysis of the future, along with economic fluctuations that are no less unpredictable.

For years demographers, biologists, economists, and other specialists have held the firm conviction that population "trends" are reliably predictable. Emphatically, *they are not.* Baker wrote in 1930: "The population of the United States ten, twenty, even fifty years hence, can be predicted with a greater degree of assurance than any other economic or social fact, provided the immigration laws are not changed."[18] If this be literally true, it is essentially misleading. Keynes, in his Galton Lecture early in 1937, put it thus:

[17] Bur. Census, "Changes in Marital Status and in Number of Households: 1890 to 1951," Ser. P-20, No. 35, Nov. 28, 1951.

[18] O. E. Baker, "Population Trends in Relation to Land Utilization," *Proceedings Second Internat. Conf. of Agr. Economists* (Menasha, Wis., 1930), p. 284. In an address at McGill University in July 1949, Baker frankly acknowledged the error of this and related convictions that he had earlier expressed.

> . . . perhaps, the most outstanding example of a case where we in fact have a considerable power of seeing into the future is the prospective trend of population. We know much more securely than we know almost any other social or economic factor relating to the future that, in the place of the steady and indeed steeply rising level of population which we have experienced for a great number of decades, we shall be faced in a very short time with a stationary or a declining level. The rate of decline is doubtful, but it is virtually certain that the changeover, compared with what we have been used to, will be substantial. We have this unusual degree of knowledge concerning the future because of the long but definite time-lag in the effects of vital statistics.[19]

Keynes did not specifically limit his observations to the United Kingdom, of which they still seem most nearly true. As generalizations, and specifically for countries as diverse as the United States, Canada, Australia, Japan, and India, they are utterly unsafe.

Two of the persistent errors in this field are: (1) the willingness of the specialists to attempt to comply with urgent requests for estimates or forecasts that cannot be reliably made—many such demands should be resisted; (2) the tendency of users of such estimates and forecasts to ignore the qualifications with which they are hedged. Three other errors have been important in the past three decades. One has been the tendency for those who make estimates based on assumptions to come to put faith in the results, ignoring their own awareness of the basic uncertainties. Another is the tendency to believe in a sort of trend magic; the very term "population trend" is deceptive and dangerous. A third has been a conservative bias in connection with future births, deaths, and net in-migration. Surely it is impressive to find that our population at the beginning of 1952 was higher than had been indicated by the highest projections seriously presented in the whole period 1933-49.

Forecasts of births for any period of years are subject to very wide margins of error. Consequently, forecasts of the total population, which nowadays depend heavily upon the number of births, can be far wrong. In this sense, forecasting births and total population in the United States is impossible, for the present at least, whether for 5, 10, 25, or 50 years ahead. These are new and important truths which many are loath to recognize.

Despite such limitations, there is a field for population forecasting that goes beyond mere multiplication and refinement of projections. First, forecasts of most age groups already born can be made subject only to reasonable margins of error, and for many purposes of important analysis these will suffice. Second, special attention should be

[19] J. M. Keynes, "Some Economic Consequences of a Declining Population," *Eugenics Rev.* (London), Vol XXXIX (Apr., 1937), pp. 13-17.

focused on the size of groups reaching certain ages, such as the common ages of entering the labor force, marrying, child bearing (for women), and ceasing to be full-time members of the labor force.[20]

On the basis of such clear evidence there is now ample reason for rejecting, for the calculable future, the entrenched convictions that our population is approaching a peak from which a decline is more probable than even stability at that level. The grounds on which the former conviction was based have collapsed. No population peak of any size, at any date, is either in sight or safely predictable. If continuation of the rate of growth of 1946-51 seems highly improbable, we have no clear basis for predicting any other. Variations in rate of growth, within and over decades, are far more probable than smooth "trends," mainly because of past and future shifts in the course of births.

The number of deaths per year can be expected to rise in the coming decades, even if the age-adjusted death rate continues its decline. Net in-migration is still unpredictable, but it is no longer safe to assume, as the favored projections of 1938-47 did, that it will be negligible or nil. Short of a catastrophe greater than World War II, however, births will almost certainly continue to exert the dominant influence on our population growth.

Whatever the population may prove to be in 1960 or 1970, there are strong grounds for expecting a new flood of births and a fresh upsurge of population in the 1970's. Most of the girl babies born since 1940 will be bearing children in that decade. More than 96 per cent will presumably survive to age 20. Most of these will marry. The median age at first marriage is now under 21. About half of the children are born before their mothers pass age 26. Such figures are of course subject to change, but there is no present ground for expecting such radical changes in habits, preferences, and social conditions as to dim the prospect of a rise in marriages even before 1970 and an ensuing bulge in births. No really high birth rate—or even rates as high as those of recent years—and no cessation of the persisting downtrend in really large families are implied.

On such a basis, considering that our population passed 156 million early in 1952, in the year 2000 it is likely to be between 200 and 300 million, and an excess over 300 million seems to me as conceivable as

[20] The margin of error in forecasting the size of upper age groups is much larger than has been hitherto realized, even for relatively short periods and much more for several decades ahead. Whelpton's 1947 *Forecasts* (p. 49) indicated 11,306,000 aged 65 and over on April 1, 1950, on the basis of his most favorable assumptions (*l h 200*). The Census reported 12,322,000 in this group, a difference of 1.1 million persons or 9 per cent. The Census Bureau's high projection published Aug. 10, 1950 indicated 11,630,000 in age groups 65 and over, for July 1, 1950. The Census figure for April 1, 1950 was 6 per cent higher. Parts of these differences were presumably due to unexpectedly favorable mortality experience in 1945-50, and perhaps an excess of older immigrants over the number assumed. But Census experts attribute more to exaggeration of ages in the 1950 returns.

a falling short of 200 million. With the reservations mentioned above, indeed, our population in 1980 seems to me more likely to be over 200 million than under it. These "guesstimates" suggest the sort of magnitudes that should now be envisaged instead of the Census Bureau's earlier peak forecast of 165 million and the Pearl-Reed figures of 175 million in the year 1980 and 185 million in the year 2000.

This revised prospect may seem pleasing to some, appalling to others. For better or worse our economic, political, and social problems will be radically different from what the former outlook had led us to expect.

It may still be true "that the rate of population growth in the United States is slowing down,"[21] if one speaks in terms of half-centuries. Few *expect* our population to *double* in 1950-2000 as it did in 1900-50, though this is no longer *inconceivable* even if we do not reopen our doors to heavy immigration. But the probable extent of the slow-down in this half-century now appears far less than demographers—and economists, following them—have considered fairly certain. A net increase of more than 50 per cent in 50 years now seems highly probable; whereas the Census Bureau's forecast of September 15, 1946 implied one of only 12.3 per cent.[22] Expectations before Pearl Harbor had been still more conservative.

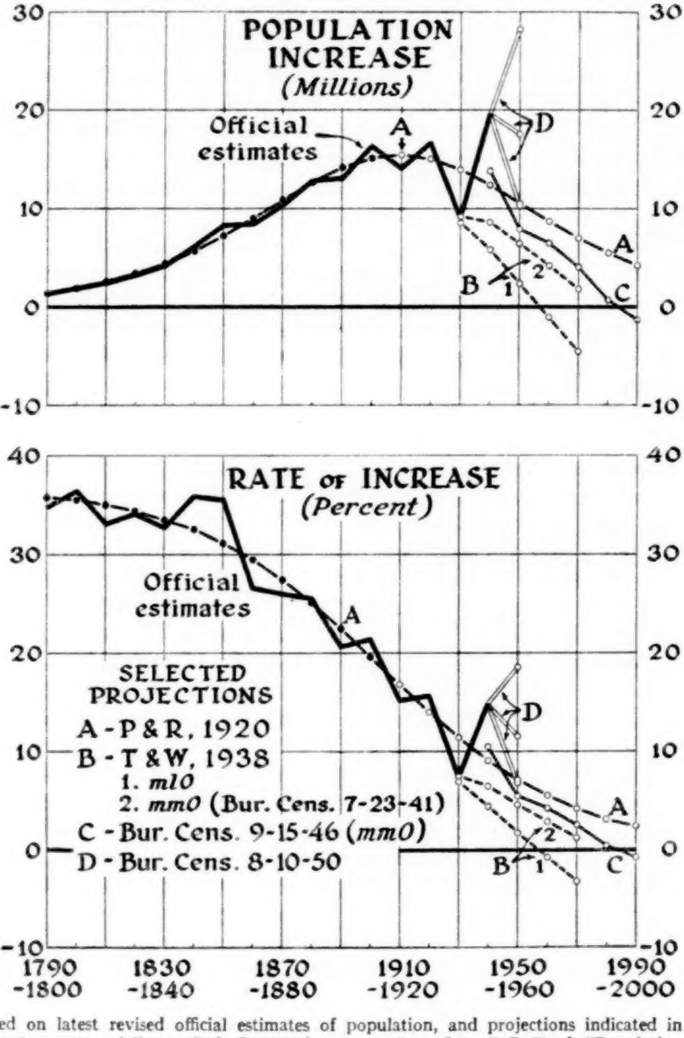
Chart 3 gives some perspective. The upper section shows decennial increases from 1790-1800, and those derived from Pearl and Reed's 1920 logistic curve (A) based on data for 1790-1910 and projected here to the year 2000. This implied a tendency to declining *absolute* increases after 1910-20. In the lower section, showing decennial *rates of increase,* the Pearl-Reed curve has a continuously downward sweep. In mid-1941 the Census Bureau formally accepted similar convictions based on the very different work of Thompson and Whelpton of the Scripps Foundation.[23] It accepted as its forecast the 1938 *m m 0* series (B2), which pointed to declines in absolute and relative increases after 1930. The revised official forecast of mid-September 1946 raised the level of both curves (C), because of unexpected increase in 1940-45, but retained the same convictions. The actual figures for 1950 were out of line with all but the most recent expectations. In mid-1950, the developing evidence led the Census Bureau to make an interim revision, limiting its projections to 1960. The high and low projections were

[21] Dorn, *op. cit.*, p. 331.

[22] This forecast, not yet formally disavowed except for 1950-60, indicated *declines in absolute increases* of population after 1947 until 1990, and *absolute decreases* thereafter. In commenting on this matter in 1947 Whelpton said (*Forecasts*, p. 39): "The outlook after 1950 is for a continuation of the long-time decline in population growth, both in absolute numbers and rate." Pearl and Reed's different forecast (1920) was similar in this respect. See Davis, *Population Upsurge*, pp. 64-73.

[23] Bur. Census, Ser. P-3, No. 15, July 23, 1941.

CHART 3.—UNITED STATES POPULATION INCREASE AND RATES OF INCREASE, ACTUAL AND PROJECTED, DECENNIALLY, 1790-2000[a]



[a] Based on latest revised official estimates of population, and projections indicated in footnote 6 except as follows: *P & R 1920* figures are from Lowell J. Reed, "Population Growth and Forecasts," *Annals*, Nov. 1936, p. 163.

frankly extremes, and the medium one was not stressed (D). The fact that the medium shows lower absolute and relative increases in 1950-60 than in 1940-50 is in accord with most expectations entertained until the fresh rise in births in 1951. The revised medium series released on April 17, 1952 points to about the same absolute increase in 1950-60 as in 1940-50. Later decades of this century will, I am confident, show one or more instances of higher absolute increases than in 1940-50.

An important job remains to be done, preferably by a group of social scientists: to provide an adequate, weighted explanation for the extraordinary change in our population position since 1940, and especially for the protracted postwar flood of births.[24] The question whether American women have changed their ideas as to the number of children they want—on which the evidence to date is inconclusive—is already under skilled investigation.[25] I shall attempt neither task. What I propose next to do is to explore some implications of our rising population in contrast to the explored consequences of a declining population.[26]

Significance of the New Outlook

The unexpectedly large population increase since 1940 has been accompanied by marked advances in American levels of consumption and living—in the lot of the "common man"—despite the war and our postwar international burdens. Here is a recent, short-term illustration of what a British historian has lately termed "the western miracle of combining a phenomenal increase of population with rising standards of living."[27] The gain, of which the recent official series of deflated personal consumption expenditures gives some indication, was impressively greater than in the preceding depression decade of our slowest population growth.[28]

The high level of births in postwar years, in a period of high employment and undreamed-of incomes for the mass of Americans,[29] raises a major question. In so far as we succeed in achieving the generally agreed objective of maintaining high-level employment and gradually

[24] For suggestions, see Davis, *Population Upsurge*, pp. 56-57, and Notestein, *op. cit.*, p. 34.

[25] See Kiser, *op. cit.*, pp. 25-37.

[26] *E.g.*, Whelpton, *Forecasts*, pp. 55-72, and Keynes, *op. cit.*

[27] W. K. Hancock, *Wealth of Colonies* (Cambridge, Univ. Press, 1950), p. 34.

[28] Based on per capita data computed from deflated series in U.S. Dept. Commerce, *Survey of Current Business*, Suppl., *National Income, 1951 Edition*, p. 146.

[29] According to one well-known index, American industrial activity has been above its estimated long-term growth trend in all but five scattered months since the end of 1940, whereas from early in 1930 until late in 1940 industrial activity was continuously below its growth trend except for the first half of 1937. Such a protracted period of active business, with the accompaniments of high-level employment, output, and income, has undoubtedly had important influence on marriages and births.

rising incomes per capita, will this continue to promote marriages, births, and relatively large population increase? It is surely reasonable to think so,[30] but this has seldom received serious attention.

Marriage and children constitute an integral part of the real standard of living of most Americans. Under economic pressure, either or both will be deferred and the number of children restricted. But if economic and social conditions permit gradual increase in consumption levels and improvements in working conditions, the gains from higher productivity will be taken, on the average, partly in more goods and services, better housing, shorter hours of labor, earlier marriage, somewhat more living children per family, and greater ease in old age. No one can safely forecast the changing proportions to which such gains will be devoted, or how seriously our international obligations will restrict the net total. But the evidence of recent years strongly suggests that if goods become obtainable with less and less effort, the competition between wants for goods and wants for babies, which depressed marriages and births in 1925-40, will be less powerful than it was then. In the light of such experience, we must beware of exaggerating limitations upon the facility with which consumption *standards*—as distinct from consumption levels—can rise or be raised. Much more research is needed before one can speak with assurance of specific limits.[31]

Our educational system is already in the throes of coping with the results of the flood of births during and since the war. School enrollment reached its prewar peak in the 1930's—in elementary schools early in the decade, in secondary schools late in the decade. Demographers late in the 1930's expected a continuing decline.

As late as 1944, Thompson considered it very doubtful whether the then assured rise in elementary school enrollment would ever bring it up to the prewar peak (23.6 million, including kindergarten pupils, in 1929-30).[32] After the slump in the 1940's, this peak has now been exceeded, probably in 1950-51. Office of Education specialists early in 1950 forecast a new peak (29.5 million) 25 per cent higher in 1956-57.[33] But the unexpected continuance of high levels of births through 1951

[30] For a concurrent view see Harold Wool (Bur. Labor Stat.), "Long-term Projections of the Labor Force," presented before Conference on Research in Income and Wealth, Nat. Bur. Econ. Res., May 25, 1951, pp. 5-7. Wool extends the argument to mortality and immigration.

[31] For the United States I strongly reject Keynes' 1937 opinion as to Great Britain (*op. cit.*): "Now past experience shows that a greater cumulative increment than 1 percent per annum in the standard of life has seldom proved practicable. Even if the fertility of invention would permit more, we cannot easily adjust ourselves to a greater rate of change than this involves."

[32] W. S. Thompson, *Plenty of People* (Lancaster, Pa., Cattell, 1944), p. 156.

[33] *School Life* (U. S. Office of Education), Vol. XXXII (March, 1950), pp. 88-89.

insures that the peak will be higher and at least four years later—how much higher and later no one can really say. It now seems safe to say, nevertheless, that enrollment in elementary schools around 1960 will exceed 30 million, 50 per cent above the low of the mid-1940's. This is a very striking change.

Enrollment in secondary schools, still depressed by the low births in the 1930's, has recently begun to rise. It will presumably pass the 1939-40 peak (7.1 million)[34] about 1956-57 and continue upward through most of the 1960's.

Total school enrollment will surely not reach its peak in the 1950's, as earlier forecasts implied, but in the 1960's; and this peak will presumably be nearer to 40 million than the 37.2 million recently forecast by the Office of Education for 1957-58. Any such maximum, moreover, will presumably be exceeded in the 1980's.

The urgent demand for more schools, facilities, and teachers is not confined to areas of exceptional population growth, such as the West Coast states and Florida, but is a national phenomenon. It reflects the joint influences of unexpectedly larger numbers, pressure for fuller coverage of children, and improvements in quality of education, which our highly productive economy can well afford even though these present difficult fiscal problems.

The population of college age will be in a trough for several years more, but will rise after 1957 and sharply after 1963 for at least five years. The actual college population, of course, is heavily influenced by the proportion of those of college age who attend college. Though veterans enrolled under the "GI Bill" exceptionally swelled the postwar college ranks,[35] there is yet no sign that the broad uptrend in this proportion will taper off.

We are now in a period when the number of young entrants into the labor force (on the average at 18) will be lower than in the recent past or in the 1960's and after. This, together with considerable enlargement of our military forces, largely accounts for the current shortage of labor in the face of the rearmament program and, in turn, for exceptional advances in levels of real wages. In such a period, premiums will be put on the retention of older workers, the rehabilitation of the physically disabled,[36] and the attraction of younger and older women

[34] *Ibid.* The source next cited gives 7.7 million persons 14-17 enrolled in school in April 1940, but some of these were presumably in elementary grades.

[35] In April 1950, according to preliminary census reports, 18.6 per cent of those aged 18-24 were "enrolled in school," as compared with 13.3 per cent in 1940. Bur. Census, Ser. PC-7, No. 1, Feb. 25, 1951.

[36] In the past two decades, striking advances in medico-sociological science have given promise that the majority of physically handicapped or disabled children and adults can be restored to independent positions within a normal community. The United Nations has

into the labor force. We can now envisage a very different situation in the 1960's, when the number of persons reaching 18 will rise greatly. Extension of schooling will presumably proceed under handicaps in the 1950's but with greater ease later. Older persons will then presumably find it much more difficult to hold jobs or get new ones, including part-time work. The 1950's now promise to be a period in which hours of labor will tend to be well maintained, whereas in the 1960's they should normally decline.

The number of boys reaching military age has been falling for nearly a decade, primarily because of the fall in births in 1924-33 but at a much slower rate because of marked reductions in infant, child, and youth mortality. From a low point in 1951, the number of boys reaching 18 will rise, at first slowly and then more sharply, to an interim peak in 1965 (roughly 1,800,000) reflecting about 2 million births in the 12 months ending August 1947. This peak will probably be 70-75 per cent above the number subject to draft registration in 1951. The corresponding number will probably be slightly higher in 1969, and only moderately lower in the intervening years. The course beyond 1969 will depend upon births after 1951, which, though now unpredictable, seem likely to be more or less below recent levels for the next few years.

The unprecedented number of births since 1942, and the marked decline in mortality of infants, children, youths, and adults through middle age, presage a swelling of the population of ages 18-64 in the next 20 years at least. The Census Bureau's 1950 medium projection points to an increase from 82.4 to 98.4 million in age groups 18-64 between 1940 and 1960. The actual increase will presumably be greater, rather than less, than the 20 per cent implied. This increase is significant for forecasts of the labor force, which is drawn most heavily from these age groups. No trend peak in the labor force is yet in prospect, as had seemed to be the case before the postwar flood of babies.[37] By the year 2000 the labor force will presumably be far higher than now.

Demographers have been right in forecasting rapid growth of the population aged 65 and over, as a by-product of improved mortality experience including that in the upper ages. Indeed, the actual increase has been and will be larger than they have predicted. But this has less grave significance than has commonly been attributed to it. Along with increasing longevity has come an appreciable extension of physical and

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recently set up a Rehabilitation Unit in its Department of Social Affairs, and various important steps are being taken to speed the progress in applying new techniques. See UN, *TAA Bulletin*, July 1951.

[37] Durand had said, on the basis of forecasts standing in 1946-57: "Unless the underlying population trend is changed the time will come after a few more decades when the labor force will cease to grow." J. D. Durand, *The Labor Force in the United States, 1890-1960* (New York, Soc. Sci. Research Council, 1948), pp. 21-22.

mental vigor. Occupational changes are tending to put higher premiums on mental skills than on physical powers. Hence the ability of older persons to support themselves in the upper ages, in whole or in part, has been increased, whether the support is earned through employment or by self-service or mutual service. Furthermore, so long as employment is at a high level, as it has been for a decade, the pressure to replace older by younger workers is less than when unemployment is serious. There are increasing recognitions of the value of older workers and of the economic and psychological desirability of facilitating the use of their reserves of earning power. Moreover, with the spread of social-security and pension arrangements, and personal investments of various kinds including owned homes, an increasing proportion of oldsters will have earned claims to income in their declining years. Finally, in so far as the burden of supporting the elderly and aged falls on younger generations or on taxpayers generally, there will be many more to share this burden than seemed likely only a few years ago.

Demographic developments in process promise marked changes in the relative population and manpower of prominent nations. The United States in 1900 had a population less than twice as large as the United Kingdom's. In 1950 it was three times as large, and by 1975 it may be about four times as large, as the United Kingdom's. As in the past 50 years, so in the next 50, Canada and Australia will gain on the mother country. In 1901 the United Kingdom had a population 4½ times the combined population of these two overseas offshoots. Early in 1951 the ratio was 2.3:1. By 1975 it will be down to 1.5:1, if one can trust current assumptions that the British population will grow but little in the next 25 years, net, if it does not actually decline,[38] and that the populations of Canada and Australia will, as in recent decades, grow at a rate faster than that of the United States. The basis for present and future comparisons of the United States and USSR is lacking, since vital statistics and other demographic data are only sporadically and inadequately revealed by the Soviet Union.[39]

Leading demographers have drawn the major inference, from their analyses and extrapolations, that the combined populations of the more advanced nations, and of the United States and Canada, in particular, will in future constitute a declining fraction of the world's population

[38] This is the prospect held out by the June 1949 report of the Royal Commission on Population, Cmd. 7695. Recent census data show that the rate of population increase there has been 4-5 per cent per decade in the past three decades, following seven decades (1841-1911) in which the decennial rate ranged between 10 and 15 per cent. *Economist*, July 14, 1951, p. 78.

[39] Harry Schwartz recently (*New York Times*, Nov. 11, 1951) summarized Soviet official information indicating, for the present territory of the USSR, populations of 193 million in 1940, 201 million early in 1950, and 207 million late in 1951. L. P. Beria of the Politburo said that the Soviet population is increasing at the rate of 1½ per cent per year.

instead of the rising fraction characteristic of the past three centuries.[40] In view of the international disparities in per capita resources and levels of living, such a development would seem highly irrational, and tragic even for the underdeveloped countries. The inference merits critical re-examination, now that the population outlook in North America has radically changed. It may be that the combined populations of the USSR and its satellites, the Middle East, Asia, Africa, and Latin America will grow in the next half-century at a much more rapid rate than they have in the past 50 years. Considering the many obstacles that they face, however, it is not easy to see how these peoples can expand so fast that the world population (including that of Western Europe) will grow as rapidly as can now be expected of the United States and Canada, with their still developing human and natural resources, their economic strength of other kinds, and the re-interpretation of their "population trends." I lean to the "guesstimate" that these two countries will have something like 8 per cent of the world's population in 2000, as compared with about 7 per cent now; but the state of population forecasting justifies no confidence in this or other "estimates."

In three earlier papers[41] I have stressed the increase in the demand for farm products due to the population upsurge since 1940, the further increase that can be counted upon as children now under 12 grow older, and the radical improvement in the prospects for American agriculture in the decades ahead as compared with the outlook as it appeared five years ago.[42] The latest data on births strengthen these prospects.

[40] See, for example, F. W. Notestein, "Population—the Long View," in T. W. Schultz, ed., *Food for the World* (Univ. Chicago Press, 1945), pp. 36-57. Kingsley Davis, relying mainly on Carr-Saunders' estimates, found the following average annual rates of increase of the world population (*Annals Am. Acad. Pol. and Soc. Sci.*, Vol. 237 [Jan., 1945], p. 3:

Period	*Per Cent*
1650-1750	0.29
1750-1800	0.44
1800-1850	0.51
1850-1900	0.63
1900-1940	0.75

Irene B. Taeuber asserted in 1944: "America North of the Rio Grande included 0.2 per cent of the world's population in 1650, 6.7 per cent in 1933." (*Estadistica*, Sept. 1944, Vol. II, p. 324).

[41] Those of November 1949 and January and April 1950, cited in footnote 4.

[42] Hardly less impressive is the concurrent decline in the number of people on farms. According to recently revised estimates, the farm population was 32.1 million in April 1910. By 1930 it had fallen to 29.4 million. After a rise during the depression, it declined to 28.8 million in 1941. The 1951 figure of 23.3 million represents 15 per cent of the total population, as compared with nearly 35 per cent in 1910. The drop of 5.5 million in the past decade is very large. The 1951 figure is 1.1 million below the wartime low of 1945. (Bur. Census, Ser. Census-BAE, Nos. 16A, 17, July 18 and Oct. 26, 1951).

Even more striking is the extreme reversal of prospects for new investment, on which the American economy has heavily depended in the past. Cannan wrote in 1931:

> A rapidly increasing population requires a rapidly increasing number of tools, machines, ships, houses and other articles of material equipment in order merely to maintain without improving its economic condition, while at the same time the maintenance of a larger proportion of children renders it more difficult to make the required additions. To a stationary population saving will still be desirable for the improvement of conditions, but it need no longer be insisted on as necessary for the mere maintenance of the existing standard.[43]

Keynes, Hansen, and others elaborated these views. One of the strongest pillars of Hansen's doctrines of "secular stagnation" and the "mature economy" was that our population growth would shortly come to an end. The Royal Commission on Population was rightly concerned with this matter in the United Kingdom. But Hansen's pillar has collapsed, so far as the United States is concerned, for our population growth prospects are totally different from what he accepted as certain. Huge private and public investments will be required to cover the requirements of a population growing at a considerable (if not extremely rapid) rate,[44] with unprecedented numbers in April 1952 under 5, 10, and 15 years of age,[45] and with rising consumption standards in food, housing, and recreation. For the time, defense requirements are compelling diversion of investment, and arrears are building up as during the war, though on a smaller scale.

Failure of investment demand was feared as a source of severe economic difficulties in the United States, including chronic large-scale unemployment and huge government spending to keep up aggregate demand. By contrast, our postwar problem has been one of *excessive* demand, making for inflation, and our population growth coupled with our world responsibilities bid fair to make this the more serious problem in the present decade.

The surprising recent population growth has been a major factor,

[43] Edwin Cannan, "The Changed Outlook in Regard to Population, 1831-1931," *Econ. Jour.*, Vol. XLI (Dec., 1931), pp. 519-33, esp. p. 524.

[44] By far the lowest decennial increase in our history was in 1930-40. Even at that average annual rate (.71 per cent), our population would double in a little over 100 years. The rate of increase in 1940-50 was nearly double this (1.40). It is now conservative to expect for 1950-2000 an average annual rate somewhere between these two. In the five years ending June 1951 the rate of increase averaged 1.73 per cent. See also data in footnote 40.

[45] Census data for 1850-1950 are conveniently summarized in Metropolitan Life Ins. Co., *Stat. Bull.*, Jan. 1952, p. 8. Corresponding numbers in April 1952 were certainly considerably higher.

reinforced by higher real-income levels and moderate hours of labor, in expanding public and private investment since the war in roads, water and sewerage systems, gas, electricity, and telephone lines, private manufacturing plants, transportation equipment, housing, and private automobiles.[46] The rearmament program is distorting and on the whole restricting such investments for the present; but the maturing of the huge group of persons now under 20, which can be reasonably forecast, gives reason to expect strong continuing demands for such investment after arrears due to wartime restrictions and the current defense program are made up.

The notable postwar demand for new housing rests not only upon wartime arrears that had to be made up and on federal and state aid by easy credit. It also reflects the population increase, the higher percentage of married as compared to single persons, higher living standards in respect to independent quarters, higher real incomes, and greatly enlarged holdings of liquid assets. The mere growth of the postwar babies will tend to increase the demand for housing space. Though many of the new houses will not be long-lived, a large proportion of them are provided with modern conveniences so dear to American hearts, and their depreciation and obsolescence will eventually provide fresh impetus for further building. Increasing fractions of our people, moreover, now feel that they can afford week-end and summer residences, even if these are no more than cabins or tents.

Certain investment requirements will presumably be intensified by the more striking population growth. Economists have tended to speak of water as a "free good." In advanced economies, at least, and even in many backward economies, it is not such in reality. Indeed, water is one of the goods for which industrialization, urbanization, and modern agriculture raise per capita needs many-fold. To insure ample sup-

[46] Reed in 1925 worked out a formula by which he forecast the number of registered passenger cars for 25 years ahead, which he combined with the population forecast based on the Pearl-Reed formula of 1920 (L. J. Reed. "A Form of Saturation Curve," *Jour. Am. Stat. Assn.*, Vol. XX [Sept., 1925], pp. 390-96). Following are his figures for Jan. 1, 1950, together with the ultimate limits ("upper asymptotes") indicated by the formulas, compared with actual figures for Jan. 1, 1950 and 1951:

Item	*Population*	*Passenger cars*	*Persons per car*
Upper asymptote	197,274,000	38,636,000	5.11
Jan. 1, 1950			
Pearl-Reed '20	148,676,000	28,416,000	5.23
Actual	150,563,000	36,293,000	4.15
Jan. 1, 1951			
Actual	153,085,000	40,167,000	3.81

As Rufus S. Tucker has pointed out to me, the number of cars in use at the turn of the year is considerably smaller than the cumulative registrations in the year then ended. Nowadays the difference is around 10 per cent.

plies of water where and when they are wanted for production and consumption, and to replenish depleted reserves of ground water, will entail expensive engineering constructions. The population increase now clearly in prospect necessitates radical upward revisions of earlier forecasts of water requirements and radical evolution of our national water policies, both because the population is sure to be much higher than earlier forecasts and because rising levels of living raise per capita water use. The 1950 report of the President's Water Resources Policy Commission takes due cognizance of this.

The foregoing discussion is suggestive, not exhaustive. Many other aspects of the significance of our radically altered population outlook will be revealed to individual specialists as they re-examine their specialties in the light of up-to-date demographic data, and keep on doing so. We must unlearn much of what the demographers have too well taught us, realize the unsound bases for many past assumptions, and view their latest projections and assertions with highly skeptical eyes. We face an extremely different nation from the one they had led us to expect with assurance, and must make the best of its unpredictability where we had thought it most predictable.

Space does not permit grappling with the many questions that arise at this point. Will even urgent wants be made effective by adequate purchasing power? Can such growing demands for food, water, consumer durables, houses, and plant be met? Are not our resources steadily dwindling? Will not the population growth now fairly in prospect force declines in per capita consumption? Can our political system stand the strains of further noteworthy population increase?

Questions of this kind are highly pertinent for the coming decades. Our success in virtually creating resources by discovery and otherwise, our remarkable technical improvements in agriculture, the demonstrated growth of productivity, almost throughout the economy, and the rise in consumption levels despite war, international burdens, and population increase, certainly suggest no grounds for despair. Indeed, by and large, the problems of a highly dynamic economy seem more appealing and less baffling to Americans than those of a stable population and possibly stagnating economy.

MONETARY POLICY AND THE TREASURY BILL MARKET

By David A. Alhadeff

I. *Introduction*

Recent discussions of monetary policy and the national debt have pointed to "the new opportunities for influencing credit availability which that debt has brought about."[1] It is the purpose of this paper to present one of these "new opportunities" and to investigate the nature of its operation. Specifically, this paper inquires into the policy implications of the relationship between the Treasury bill market and the customer loan market, both of which deal with short-term credit. Students of banking will recall that the Federal Reserve Banks engaged in open-market operations for many years before open-market operations were deliberately used as an instrument of credit control.[2] Open-market operations were not even contemplated as an instrument of monetary policy by the framers of the Federal Reserve Act. In the early period of the Federal Reserve System, major reliance for controlling the money supply was placed in changes in the central bank's rediscount rate. An increase in rediscount rates, by raising the cost of borrowing from the Federal Reserve, was expected to firm commercial loan rates and thus to restrain business borrowing, while the reverse reaction was expected from a lowering of the rediscount rates. For many years, discount rate changes have not been effective credit control devices in the manner originally intended, because member bank borrowing from the Federal Reserve is no longer significant.[3] Such efficacy as rediscount rates may have today derives in large part from their psychological impact and not from a change in the cost of funds borrowed by banks.

If statements made before the Douglas Subcommittee on Monetary, Credit and Fiscal Policies by responsible officials can be taken at face value, it would appear that the huge expansion in the national debt has

[1] See Robert V. Rosa, "The Revival of Monetary Policy," *Rev. Econ. and Statistics*, Vol. XXXIII, No. 1 (Feb., 1951), p. 32.

[2] "Though engaged in as early as 1914, open-market operations were first used as an instrument of credit policy in 1923 . . ." Federal Reserve System, *Banking Studies* (Baltimore, 1941), p. 374.

[3] In June 27, 1951, total discounts and advances at all Federal Reserve Banks amounted to only $220,301,000.

given rise to a new instrument of monetary policy whose effect would be similar to that originally expected from discount rate changes. This point is illustrated by the following excerpt from the Douglas Hearings:

> SENATOR DOUGLAS: Was it your feeling if the interest rate on short-time governments were allowed to rise, that the interest rate on loans to private borrowers would also rise?
>
> MR. MCCABE: You see, the whole credit structure is closely related to the Government-bond market and very sensitive to the Government-bond market. So, if there is a rise in Government bonds, there is a stiffening of rates throughout the whole credit structure.[4]

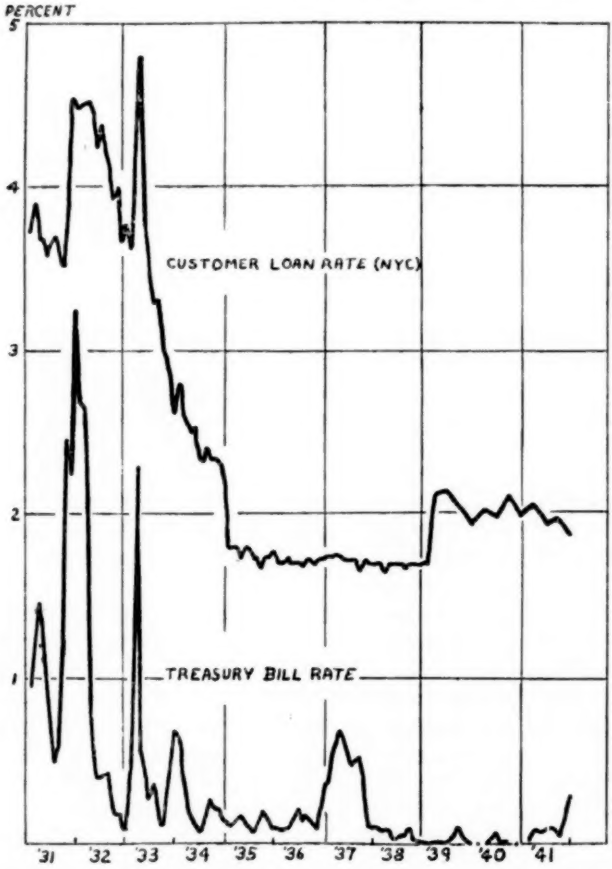
A review of the relationship between the Treasury bill rate and the customer loan rate is necessary to assess the validity of Mr. McCabe's statement and to determine whether the pattern is of the kind indicated. If the fact of a positive relationship is established, it will then be necessary to investigate the nature of the mechanics involved in order to determine under what circumstances and in what manner changes in the bill rate could be expected to influence a change in the customer loan rate. To avoid possible confusion, it should be stated explicitly that this paper is not concerned with appraisal of the efficacy of customer loan rate changes in influencing the volume of business borrowing. This important problem merits detailed consideration, but is properly the subject of a separate paper.

In the accompanying chart, the fluctuations of the Treasury bill rate and of the average customer loan rate, New York City, can be compared for the twenty-year period from 1931 to 1951.[5] The chart reveals that in most years during the period studied, the two rates moved in the same direction. Significantly, too, there is evidence of a lead-lag relationship in which movements on the customer loan market follow changes in the bill rate. There are, however, two important exceptions: In 1937, the Treasury bill rate fluctuated whereas the customer loan rate was impressively stable. By contrast, from 1942 to 1945, the Treasury bill rate was perfectly stable whereas the customer loan rate fluctuated.

[4] Testimony of Mr. Thomas B. McCabe, former chairman, Board of Governors, Federal Reserve System, before the Subcommittee on Monetary, Credit, and Fiscal Policies of the Joint Committee on the Economic Report, Congress of the United States, Eighty-first Congress, First Session, p. 466. Hereinafter, this document will be abbreviated to *Douglas Hearings*. It is clear from the context that McCabe is referring to short-term securities, despite his reference to the "bond market." See pp. 465-66. Also *cf.* the similar testimony of Mr. Alan Sproul, president, Federal Reserve Bank of New York, especially p. 457.

[5] Until a later point in this analysis, average customer loan rates throughout the country will be represented by average customer loan rates in New York City. Although the Treasury began to issue bills in 1929, the starting-date of 1931 was selected because no series is available until that year. The customer loan series was plotted on a monthly basis through March, 1939, but was available thereafter only on a quarterly basis; the bill rate was plotted monthly for the entire period.

CUSTOMER LOAN RATE (NYC) AND TREASURY BILL RATE, 1931-41*

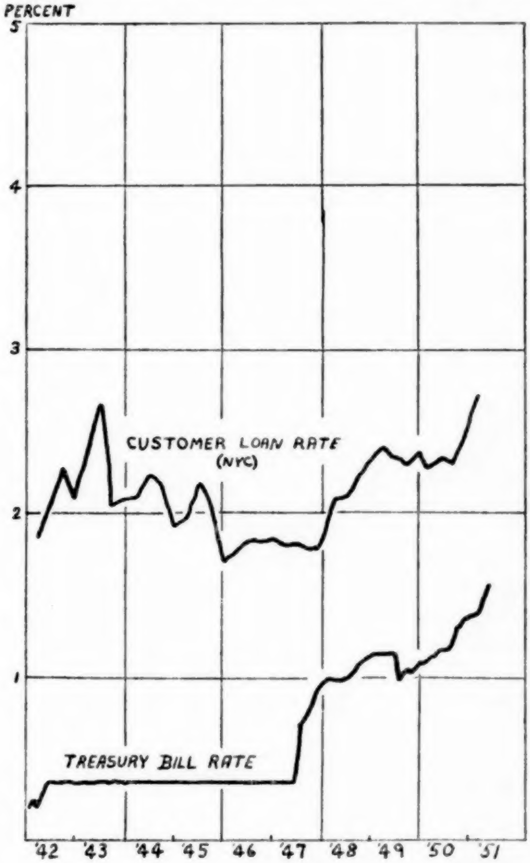


* Sources: Board of Governors, Federal Reserve System, *Banking and Monetary Statistics* (Washington, 1943), p. 460, pp. 463-64, for the period 1931-41.

Discontinuities in the Treasury bill rate series indicate periods during which the bill rate was negative.

With the exception of the two periods noted, the statistics on interest rates are generally consistent with Mr. McCabe's analysis. Furthermore, Mr. McCabe's statement would seem to imply a causal nexus; the initiating impulse for a change originates in the bill market and is then transmitted to the customer loan market. With the fact of common

Customer Loan Rate (NYC) and Treasury Bill Rate, 1942-51*



* Sources: Board of Governors, Federal Reserve System, *Federal Reserve Bulletins,* for the years 1942-51.

Discontinuities in the Treasury bill rate series indicate periods during which the bill rate was negative.

movement established, it is now necessary to analyze the nature and mechanics of this relationship. It is particularly important from a policy viewpoint to investigate the possibility of a causal nexus between the two markets.

Since the pattern of relationship is not homogeneous throughout the

period, it will be convenient to conduct the analysis by a process of successive approximations. The first approximation will try to explain why the two series move together as much as they do. In a second approximation, the basic analysis can be modified to account for the extent of divergent movement between the two series.

Comparison of open market and customer loan rates. An understanding of the mechanics of the relationship between the Treasury bill market, and the customer loan market is aided by first considering the relation between the customer loan market and the open money market for short-term funds. The Treasury bill market is only one of the submarkets of the open money market, and, in large part, its relationship with the customer loan market derives from its characteristics as an open money market. Furthermore, the fact that there are other submarkets in the open market modifies the nature and extent of the interaction between the bill market and the customer loan market. A few comments are thus in order to highlight the important distinguishing characteristics of the open market and the customer loan market.

The open market for short-term funds is actually a conglomeration of submarkets, including the market for prime bankers' acceptances, commercial paper, call and time loans on stock exchange collateral, and Treasury bills. Each of these submarkets is, in a sense, a self-contained unit, with one common characteristic uniting them for purposes of analysis—complete impersonality. In such markets, buyers and sellers are entirely indifferent to each other. A lending bank feels no sense of responsibility nor any continuing obligation towards those to whom it makes funds available. Borrowers likewise understand that they can expect no special consideration in the event of credit stringency.

The expression "customers' loan market" is also merely a label which encompasses a vast number of submarkets in all parts of the country. These submarkets are all bound together in varying degree. In the largest financial centers, or in big cities, the ties are very close and such banks participate in what is broadly a common market. By contrast, the country banks incline to be somewhat more autonomous in their policies and activities. While almost complete impersonality characterizes the open market, the personal element is often of dominating importance in the customer loan market. Each customer loan is negotiated as an individual case, both with regard to price and to the terms of the loan, and, in the normal course, the customer will become a regular client.

A corollary of the banker-customer relationship is the almost universally held opinion that, as one prominent banker stated it: "(Banks) *always* would prefer to lend to commercial borrowers than to hold Government securities. That is our permanent business. We want to

do business for our customers."[6] By contrast, the open money market is the repository of the country's surplus funds, *i.e.*, "funds not needed or demanded by local business activity, or by the customer bank-loan market."[7] Dr. Burgess, a vigorous proponent of this view, has stated this position clearly:

> The New York money market is the national market for *surplus* funds. As the leading money market of the country, it is the center towards which the *idle money* of all sections gravitates to find employment, pending the time when it is needed.[8]

II. *The Open Market—A Passive Margin*

The fundamental nature of the relationship between the customer loan market and the open market (and, thus, with the Treasury bill market) can now be set forth. In a very real sense, the customer loan market and the open market are a common market for short-term funds. The basic unity of the two markets is suggested not only by the foregoing analysis but also by the parallel routes of fluctuation of the two series. It should be noted, however, that although the routes of fluctuation of the two series are similar, the *level* of rates in the two markets is clearly different. This difference in level can be understood partly in terms of the objective differences between the kind of loans made on the open market and those made on the customer loan market —differences in risk, liquidity, etc. The difference is due in part to noncompetitive influences in the various markets. Finally, these differences in level are partly due to different methods of allocating costs under alternative marketing techniques.

Although the open market and the customer loan market constitute a common credit pool for short-term funds, the latter is substantially more important than the former in terms of volume of funds. The significance of the open market inheres not in its size, however, but in its marginal nature and in the high sensitivity which that marginal nature implies. Basically, the open market is marginal in Marshall's sense of the term.[9] The open market simply *measures* the broad forces of supply and demand for short-term funds in the entire country. The margin does not determine prices in the national short-term market; prices are determined by demand and supply. The margin, in this view, is analogous to the pressure gauge on a boiler.

[6] Testimony of Mr. Randolph W. Burgess, chairman of the executive committee, National City Bank of New York, *op. cit.*, p. 193. Italics added.

[7] The definition of "surplus funds" is that used by Benjamin H. Beckhart, *The New York Money Market* (New York, 1932), Vol. III, p. 5.

[8] Randolph W. Burgess, *Reserve Banks and the Money Market* (New York and London, 1927), p. 110. My italics.

[9] *Cf.* Alfred Marshall, *Principles of Economics*, Eighth ed. (London, 1947), p. 410.

This conclusion about the relation between the customer loan market and the open market holds tentatively also for the Treasury bill market. The foregoing analysis thus explains the observed pattern between Treasury bill rates and customer loan rates. According to this analysis, sequence does not evidence causation, for rates in both markets are commonly determined. The only significance to the sequence of rate changes is that, in general, restrictive (or expansionary) tendencies make themselves felt first in the marginal (Treasury bill) market and only with a lag in the broader (customer loan) market for short-term funds.

The foregoing analysis, which is consistent with traditional views on this subject, explains the *basic* (and historical) relationship between the two markets. The analysis needs qualification and elaboration on at least two grounds: (1) the preceding explanation is silent on the possibility of a causal nexus between the two markets; (2) while common movements are explained, there is no explanation for important divergent movements, *e.g.*, 1937, 1942-47, nor, indeed, for the lack of a better correlation than actually exists even during periods of common movement. Since we are seeking generalized explanations, ephemeral and transitory influences that could account for short-run erraticisms can be ignored. This inquiry is concerned with generalized causes which can explain divergent movements above and beyond those explicable in terms of specific and transitory influences. Such generalized explanations for divergent movements should, preferably, also provide the key to the possibility of the aforementioned causal nexus.

The theory as thus far developed rests on two cardinal propositions: (a) that the open market (and, hence, the Treasury bill market) is the repository for exclusively surplus funds and is thus a *marginal* market, and (b) that the open market is marginal in a *passive* sense. If both of these characteristics perfectly inhered in the open market, the lead-lag correlation between the Treasury bill rate and the customer loan rate (New York City), allowing for a frictional blur in the lead-lag period and barring transitory influences, would also be perfect. Although the actual correlation appears to be high, it is far from perfect. The lack of perfect correlation must, therefore, be due (previous exceptions noted) to generalized factors which compromise the marginal aspect of the open market and its passive nature. The following investigation is divided accordingly.

III. *Modifications of the Surplus Funds Doctrine*

Secondary reserves and the open market. In his discussion of the open market, Dr. Burgess pointed out that "The money in the money market may thus be thought of *not simply as surplus funds, but as the secon-*

dary reserves of banks and business all over the country."[10] Banks invest secondary reserves in the open market because open market paper is highly liquid, practically riskless,[11] and is sold in suitable (meaning short) maturities and convenient denominations. Further, open market investments are normally preferable to non-interest-bearing excess reserves.

While it is true that surplus funds invested in the open market can serve as secondary reserves for banks, not all funds invested in the open market are surplus, nor are all secondary reserves surplus funds. A banker's ability in his profession is most clearly revealed in the composition of the bank's portfolio, for it is in the bank portfolio that the conflicting demands of profitability and safety of a bank must be reconciled. In the allocation of a bank's funds, secondary reserves take priority over customer loans.[12] After insuring its liquidity and fully satisfying the local demand for customer loans, the bank can again enter the open market to invest its surplus funds for whatever income is possible. This emphasis on protective investment suggests an important qualification to the earlier analysis. Since Treasury bills are an important form of protective investment, banks would not, as has been alleged, "*always* prefer to lend to commercial borrowers than to hold Government securities." Accordingly, open market securities held for protective investment do not represent surplus funds from the customer loan market, and are not, therefore, a marginal supply of funds.

Dr. Burgess has emphasized that "in the New York market we are dealing with what economists call the marginal supply and the marginal demand, which are the first to show any changes in conditions."[13] At least one qualification to this statement is now apparent. The short-term open market investments are all available as secondary reserves,

[10] Burgess, *Reserve Banks and the Monetary Market*, p. 110. My italics.

[11] The risk here refers to risk of default and not to fluctuations of market prices. Commercial paper, for example, has a record of negligible losses to the holders. This is due no doubt to the fact that prospective borrowers on commercial paper are most rigidly scrutinized and only companies which are very large and eminently sound are accepted as clients by the commercial paper houses. Call and time loans are also very secure because they are backed by stock exchange collateral in a manner which varies the collateral with any variation in the market value of the securities. Bankers' acceptances are "two-name paper," and one of the names is that of a large, strong bank. Treasury bills are safe for the obvious reason that they represent the credit of the United States government, and, in any case, are eligible for rediscounting. Finally, open market paper is bought with no consideration other than the soundness and yield of the paper; customer loans are frequently influenced by personal considerations which can outweigh possible technical inadequacies of the loan.

[12] *Cf.* Roland I. Robinson, *The Management of Bank Funds* (New York, 1951), pp. 12-18.

In this connection, Robinson's use of the expression "protective investment" is more revealing than the more common "secondary reserves."

[13] Burgess, *op. cit.*, p. 112.

but only part of these investments represents surplus funds. Under "normal" circumstances, when the open market contains *bona fide* marginal (surplus) funds, pressure on bank reserves can be relieved by liquidating some of the open market investments with a resultant stiffening of open market rate, a stiffening which is subsequently felt also in the customer loan market. During a period of sustained credit stringency, however, it is entirely possible that the investment-for-income securities of the open market will have been liquidated, leaving only funds for protective investment. Under these circumstances, any further pressure would, *ceteris paribus,* hit the customer loan market (specifically, marginal customer loans), but the further stiffening of customer loan rates would not (again *ceteris paribus*) also be felt in the open market. In other words, the marginal funds would be those invested in the marginal customer loans and not those funds which remained invested in the open market.

In practice, positive identification of such a situation is difficult. In the first place, bank statements do not disinguish beween open market investment for income and open market investment for protective investment. Furthermore, in a real life situation, many other factors (especially central bank intervention) would likely be in the picture at the same time, making it difficult to isolate the effects of particular forces. Present difficulties of empirical identification should not, of course, preclude attempts at theoretical exposition of underlying tendencies.

Federal funds. The existence of federal funds also compromises the marginal character of the open market. Federal funds arise from the excess reserves of banks. A bank which is experiencing a temporary deficiency of reserves can make up this deficiency by purchasing the excess reserves of other banks. Such negotiations are typically transacted by negotiation between the banks concerned, although there is a "going rate" for federal funds. The use of federal funds became prominent during the 'thirties when the banking system had large excess reserves. Although the banking system as a whole had excess reserves, the large money market banks of New York City would often find themselves under pressure. Such banks could have secured the required reserves by borrowing from the Central Bank or liquidating open market investments. With abundant excess reserves in the interior banks, however, it was definitely cheaper to meet a temporary reserve shortage by purchasing federal funds.[14] During the decade of the 'forties, and, indeed, even at the present time, many banks continue to

[14] For a description of a typical instance, see Federal Reserve Bank of New York, *Monthly Review,* September 1, 1937, p. 65. The bulk of federal funds at that time was purchased at the rate of ¼ per cent.

resort to federal funds to meet a reserve deficiency of two or three days, or even overnight. As mentioned earlier, member bank borrowing from the System has been negligible for many years; significant reserve deficiencies are typically met today by sale of Treasury securities in which most banks are heavily invested. However, to meet a temporary deficiency of reserves, large banks in Central Reserve and Reserve cities often find it cheaper to buy federal funds, because "The sale and repurchase of securities contains an element of cost in the commissions that they have to pay in the buying and the selling."[15] In such cases, federal funds are the marginal short-term funds and short-term pressures would be absorbed in the federal funds market without necessarily being reflected in the open market, or, what is of particular interest in this paper, in the Treasury bill market.

Excess reserves. Under present circumstances, "It is impossible to maintain more than about three-quarters of a billion of excess reserves, which are maintained largely by . . . country banks."[16] Even though excess reserves do not today reach the levels of the 'thirties, a consideration of the effect of excess reserves is pertinent to this analysis on at last three scores. First, excess reserves must be considered in understanding the relationship of Treasury bill rates and customer loan rates in previous periods. Second, although excess reserves are not large today, there is no guarantee against some future "credit deadlock." Most important of all, however, excess reserves can affect the relation of Treasury bill rates and customer loan rates even when the excess reserves are not of the huge magnitudes of the Great Depression. The experience of the 'thirties demonstrated that when the banking system is holding large excess reserves, the excess reserves, and not the open market investments, are the marginal funds which are the first to feel changes in credit conditions. Thus, in June, 1937, when the banks held heavy excess reserves, "Movements of reserve funds of as much as $500,000,000 to $1,000,000,000 occasioned little or no disturbance in the money market."[17] With large excess reserves in the System, a pressure on an individual bank's reserves is reflected first in federal funds and not at all in open market short-term rates. That was actually the situation in August, 1937, when New York City banks experienced a reduction in their excess reserves with the result that the rate on federal funds rose as high as ½ per cent on some transactions whereas there was virtually no change in open market rates.[18] If the pressure on

[15] Testimony of Mr. Marriner S. Eccles, then member, Board of Governors, Federal Reserve System, *Douglas Hearings*, p. 225.

[16] Eccles, *ibid.*, p. 226.

[17] Federal Reserve Bank of New York, *Monthly Review*, July, 1937, p. 49.

[18] *Cf. ibid.*, September, 1937, p. 66.

reserves is sustained or is large enough, the effects will, of course, eventually be felt, too, on the open market. For example, on January 30, 1937, the Board of Governors announced an increase in reserve requirements to be effective on March 1 and on May 1. Most banks were able to meet the increase from their excess reserves, but at least some banks had to borrow from other banks and a certain number was obliged to liquidate some open market investments.[19]

During the depression years of large excess reserves, customer loan rates were remarkably stable. With the conspicuous exception of 1937, Treasury bill rates were also relatively stable during that period. Although the demand for customer loans did fluctuate, even during the depressed 'thirties, this variation was absorbed, first, in a shift of excess reserves, with an accompanying rise of federal funds rate, and, second, in fluctuation of open market rates. The fluctuation in demand did not affect the customer loan rate. The economic revival during the early months of 1937, for example, stimulated an increased demand for business loans. This increase normally would have firmed rates in the open market and then with a lag, in the customer loan market. Nevertheless, customer loan rates did not rise. Many banks met the increased demand for customer loan funds partly by reducing excess reserves, and, since the excess reserves of many banks were relatively low, partly by liquidating their government securities. The result was a mild firming of Treasury bill rates but continued stability in the customer loan market.

The Federal Reserve and its "non-marginal funds." In still another sense, it is inaccurate to describe Treasury bill rates as the rates determined by the marginal demand and marginal supply of short-term funds. During the war period, the demands of war finance dominated central bank policy with the result that the government securities market was not a free market. The central bank not only established repurchase provisions for Treasury securities; it also engaged in open market operations with the aim of exactly setting their price. Since the central bank's portfolio is managed not for profit but for purposes of credit control, the funds employed in open-market operations are hardly "surplus" in the usual sense.

Organized voluntary credit restraints. In March, 1951, a National Voluntary Credit Restraint Committee was organized under the aegis of the Federal Reserve. Its purpose was to organize commercial bankers to restrain inflationary expansions of credit.[20] Such voluntary credit

[19] *Cf. Federal Reserve Bulletin,* April, 1937, p. 283.

[20] For example, "refrain from financing inventory increases above normal levels relative to sales, or reasonable requirements by other conservative yardsticks." *Ibid.*, April, 1951, p. 379.

restraints amount to credit rationing. Now, credit rationing is hardly new to the banking community; it goes on all the time. The relevant point here is that ordinary credit rationing to commercial borrowers may be due to the credit unworthiness of a particular borrower, or to considerations of portfolio diversification in a particular bank, etc. The credit rationing now proposed will operate to hold down the demand for commercial loans in the interests of a government program of anti-inflation credit control.[21] Such credit rationing will, of course, "release" funds from the customer loan market which will then be available for investment in government securities. Again, such "released funds" are hardly marginal or surplus in the sense of the passive margin theory of the open market.

Summary. Because of the kind of factors listed above, it is inaccurate to claim that the open market is the repository for the marginal funds of the economy, especially if this statement is interpreted to mean that *only* surplus funds find their way to the open market. To the extent that other than surplus funds are invested in open market securities, the traditional explanation of the observed pattern of relationship between customer loan rates and open market rates must be modified. In other words, the lack of perfect correlation between the Treasury bill series (or any open market series) and the customer loan rate series is in part due to the fact that open market funds are not always and exclusively marginal (in the surplus sense). Specifically, if the open market contains only protective investment, the marginal short-term funds in the economy are the least desirable customer loans. A pressure on reserves could thus force liquidation of marginal customer loans (with a corresponding tendency towards firmer rates on the customer loan market) while open market investments for protective purposes are left untouched and open market rates, stable.

If the system has excess reserves, the excess reserves and not the open market funds are marginal. An increase in the demand for funds need occasion no increase in customer loan rates. However, if individual banks expand more rapidly than all the others, they may suffer adverse clearings with a consequent reduction or even elimination of their excess reserves. Such banks might then borrow the excess reserves of other banks and the rate on federal funds would increase. A sustained pressure of this sort might even force liquidation of open market investments, so that rates would rise in the open market. If, however, the pressure does not continue, it need not hit the customer loan market and customer loan rates would be left unchanged. Such a development would be another generalized explanation for a lack of perfect correlation between open market and customer loan rates.

[21] *Cf.* "Program for Voluntary Credit Restraint," *ibid.*, March, 1951, p. 264.

Another factor which can account in part for the lack of perfect correlation between open market and customer loan rates is the influence of the central bank on the open market. It would be possible, for example, for the central bank to engage in open-market operations to lower Treasury bill rates while at the same time taking restrictive action on the customer loan market by raising reserve requirements.[22]

Finally, in a period like the present, the existence of *organized* voluntary credit restraints by commercial banks in the interests of restraining inflation may remove funds from the customer loan market to the open market. Accordingly, low (or even falling) rates on the Treasury bill market would be perfectly compatible with tight credit (with or without rising customer loan rates) on the customer loan market.

The above list of factors is not, of course, comprehensive of all the elements which could at different times compromise the marginal character of open market funds; the above list is rather suggestive of some important qualifications to the alleged marginality of open market funds, To the extent that open market funds are not surplus (and, hence, not marginal), the traditional explanation of the relation between the open market and the customer loan market must be modified.

IV. *Qualifications as to the Passive Nature of the Open Market*

In this section, it will again be convenient to subsume the Treasury bill market under the open market. It has been thus far assumed that the open market is marginal in a *passive* sense, *i.e.*, it simply measures the broad forces of supply and demand operating all over the economy.[23] In fact, the submarkets of the open market do more than measure at the margin the demand and supply from the whole country, for each submarket is endowed with a semi-independent (autonomous) existence. Thus, for example, there are special demand and supply forces in the call loan market which are essentially peculiar to itself, *viz.*, its relation to the stock market, and which may be shared, if at all, only to a much lesser degree with the rest of the economy. Or, again, the bankers' acceptance market may be particularly active due to foreign trade transactions which are being negotiated in dollars through the New

[22] A conflicting use of central bank credit controls is, of course, not unknown. In 1937, for example, the Federal Reserve Board feared a potential inflation on the basis of the large excess reserves in the banking system, so it raised reserve requirements. At the same time, however, it willingly purchased securities from individual banks put under pressure by this action, since the goal was to reduce excess reserves, and not to penalize individual banks.

[23] The previous section raised objections to the "marginal" nature of open market funds; this section questions whether the notion of a *passive* margin is entirely accurate.

York market, but such transactions need not be tied to a general movement within the rest of the economy. The special demand and supply forces in the Treasury bill market would include any central bank or Treasury activity on that market which is motivated by the government's economic policy, *e.g.*, government policy towards inflation, deflation, war finance, debt management, etc.

It is still correct that, basically, the open markets are marginal in a passive sense, because these markets are to a considerable extent an integral part of the broader money market for the short-term funds of the country. Within the framework of responding to broader demand and supply forces, however, the individual sub-money markets also respond to the forces of demand and supply which are, more or less, peculiarly their own. Since the submarkets are endowed with a semi-autonomous existence, open market rates may become "out of line" with rates on the customer loan market. When it is further recognized that not all open market investments are made with surplus funds, the stage is set for an interaction between the submarkets of the open market and the customer loan market.

In short, there is a duality in the marginal nature of the open markets. In a basic sense, these marginal markets are passive and reflect common forces of demand and supply. Beyond this basic limit, these marginal markets become *active* and do compete with the customer loan market.

V. *Impact of Treasury Bill Market on Customer Loan Market*

In their active character, the open markets can affect customer loan rates directly or indirectly. A specific example of direct influence can be found in the movement of the call loan rate. As with all the submarkets of the open market, the call loan rate and the customer loan rate move roughly together with the call market in a passive rôle. But in 1928-29, when call money was in great demand because of extensive speculation on the stock market, rates on call money were very high and attracted more than just the surplus funds from the customer loan market.[24] By draining non-surplus short-term funds from the customer

[24] This action was deliberately planned by the Executive Committee of the Stock Exchange Clearing Corporation (in cooperation with the large New York City banks and the Federal Reserve Bank of New York) in attempts to stabilize the market for call money. For a merely transitory discrepancy between demand and supply, the Executive Committee would request the New York City banks to make more funds available and thereby prevent the rate from rising. When the disequilibrium was considered to be more than temporary, the Committee would arrange for only part of the supply to be made available to borrowers at a fairly high rate of interest. It was hoped that when news of this high rate was flashed to the entire world, it would attract the necessary funds to New York. This procedure could be repeated until the requisite funds were forthcoming. If the response continued inadequate, the Committee would call upon the New York City banks to supply enough funds to keep the call rate from abnormal rises. *Cf.* Beckhart, *op. cit.*, p. 55.

loan market, the call market was partly responsible for raising customer loan rates also.[25]

Sometimes a change in open market rates can indirectly affect customer loan rates through anticipations which are aroused by open market rate changes. A full analysis of the rôle of anticipations and uncertainty upon interest rates is beyond the scope of this paper. In general, it may be observed that a change in open market rates can arouse expectations of a general interest rate movement. The expected movement might then be anticipated in the customer loan market even though a change is not warranted by any alteration in the reserve position of the banks or in the demand for loans. The degree of reaction on the customer loan market to open market changes is partially determined by the force of the indirect impact.

Rate changes in the Treasury bill market illustrate the possibility of both direct and indirect influence on the customer loan market. With today's huge national debt, Federal Reserve activity in the Treasury bill market reverberates throughout the entire banking structure. Towards the end of 1947, for example, the Federal Reserve System dropped the supports on government bonds by one or two points. This was the so-called Christmas present by the Federal Reserve to the banks. The resulting increase in Treasury bill rates was followed a few months later by an increase in customer loan rates.[26] The increase in customer loan rates was due at least in part to the competition between customer loans and Treasury bills. In order to compete successfully with the higher bill rate, customer loan rates had to rise also.[27] In part, too, the increase in customer loan rates reflected the bankers' belief that a general increase in interest rates was forthcoming. In other words, the raising of the Treasury bill rate with official sanction served as an announcement of Federal Reserve credit policy and also as an indicator of the future course which interest rates would take.[28]

[25] *Cf.* Beckhart, *ibid.*, p. 10 ff.

[26] In his testimony before the Douglas Subcommittee, Mr. Burgess reported that the increase in Treasury bill rates "slowed up the process of new financing, made people who were planning investment programs—I mean business people who were going ahead with accumulating inventory or building new plants or buying machinery—go a little slower." *Douglas Hearings*, p. 182.

[27] A similar development occurred recently in the market for long-term funds. When the Federal Reserve unpegged long-term rates, mortgage money became tight and continues to be tight. The higher rates on government long-terms would normally force an upward revision in (competing) mortgage rates. Since mortgage rates are "frozen" under FHA- and VA-insured mortgages, mortgages are unable to attract funds away from government securities.

[28] This situation was described in the Monthly Letter of a large New York bank: ". . . the possibility that the authorities will continue to draw back their support levels and allow short-term interest rates to rise further has entered into bankers' calculations and provided an inducement to continued holdings of short-term Governments in anticipation

War-time relation of Treasury bill and customer loan rates. The purchase of short-term open market securities for income purposes takes lowest priority in the allocation of commercial bank funds. Since such investment normally presupposes that protective investment and the demands of commercial borrowers have already been met, the funds so invested would be surplus funds. During the war period, however, the funds invested in Treasury bills were clearly not exclusively marginal funds. From the middle of 1940 to the end of 1945, commercial banks purchased $95 billion of U. S. government securities. Many of these bonds were purchased under a combination of pressure and cajolery from official sources.[29] In order to encourage bank purchase of Treasury bills, the Treasury "tailored" the debt to the needs of different investors; hence, the offer of bank-restricted bonds and of short-term securities designed for commercial banks. The Federal Reserve Banks agreed to repurchase provisions at a fixed rate of 3/8 per cent. To eliminate uncertainty further, the System also undertook to peg the bill rate, and, indeed, to freeze the entire interest rate structure on government issues. Although government securities carried very low rates, the virtual guarantee during the war of their market prices together with their huge volume made them a profitable source of investment for other than surplus bank funds. In November, 1949, the president of the Philadelphia Reserve Bank even speculated that in the event of a departure from a policy of a fixed price structure, with an accompanying adjustment of market values, ". . . it may well be that banks would prefer to remain in Governments rather than to enter into the field of commercial credit extension."[30] In this context, the accuracy of this conjecture is less important than the testimony by a competent observer of *competition between commercial credit and Treasury securities.* Such competition clearly modifies the surplus funds doctrine of open market investments, and, more important, qualifies the *passive* margin notion of open market investments.

Reference has already been made to the wartime fluctuation of customer loan rates despite the complete stability of Treasury bill rates. Specifically, from May, 1942, through June, 1947, the Treasury bill rate was perfectly stable, but the customer loan rate fluctuated within a

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of a further improvement in short-term yields. Some hardening has been apparent in loan rates and banks are less eager to enter into term loan arrangements." National City Bank of New York, *Monthly Letter,* November, 1947, p. 131.

[29] A propos of the war-time responsibility of banks, the president of the Federal Reserve Bank of Philadelphia has remarked: "The position of the banks—I think they all understood it—was they were to be residual buyers of anything and they were to provide the funds we could not obtain by taxation and borrowing from the rest of the economy." Testimony of Mr. Alfred H. Williams, *Douglas Hearings,* p. 40.

[30] *Ibid.*, p. 50.

range of 1 percentage point. Although there was active competition between Treasury bills and customer loans, the Treasury bill rate was immobilized by the central bank's "freeze" of the rate structure. Accordingly, any variation in the demand or supply situation was reflected in the customer loan market. In late 1941, however, the Treasury bill rate rose and the New York City average customer loan rate also rose somewhat, with a lag, in early 1942. In 1947, the Treasury bill rate again began to climb and again the customer loan rate followed with a lag later in the year.

The pegging of Treasury bill rates had another effect on customer loan rates. In so far as there is a fluidity of funds between the Treasury bill market and the customer loan market (*i.e.*, in so far as the bill market is active in either the direct or indirect sense), our analysis would suggest that the customer loan rate was probably more rigid than it would have been had the Treasury bill rate been free to fluctuate at the impetus of uncontrolled demand and supply.

Finally, it is worth noting that the customer loan rate fluctuated at a generally lower level during the war period than at any previous time. The customer rate had already begun to decline after 1929, reflecting the reduced demand for funds during the depression and also the huge excess reserves resulting from the gold inflows during the 'thirties. During the war period, the low level of rates no doubt is partly explained by the enormous increase in reserves (*i.e.*, increase in the supply of funds) which were created simultaneously with the growth of the national debt. Our analysis would suggest, however, that at least in part the low level of customer rates during the war and postwar period has been influenced by central bank and Treasury policy which held Treasury bill rates at historically low levels over a period of years.

Non-homogeneity of the open market. It has long been recognized that "interest rates are the thermometer of credit." Furthermore, our analysis has shown that typically (but not always) open market rates are more sensitive to changes in credit conditions than customer loan rates. The analysis of the relationship between the bill rate series and the customer loan rate series has subsumed the Treasury bill market under the open market. Actually, of course, the open market comprehends various submarkets and these submarkets are not homogeneous in their degree of sensitivity to general credit changes. In large measure, the sensitivity of the various submarkets is a function of their size. During the decade of the 'twenties, for example, the call loan market was the most sensitive[31] and also overwhelmingly the most important submarket of the open market, approaching the $7 billion mark in 1929.

[31] During the 'twenties, "a transfer of as little as $25,000,000 from New York may cause an increase of ½ per cent in the call-loan rate." Burgess, *op. cit.*, p. 112.

After the stock market crash, however, its importance declined considerably and the largest market during most of the 'thirties was the Treasury bill market, which in 1937 reached $2.3 billion.[32] Corresponding to the change in the position of call loans and Treasury bills in commercial bank portfolios, the Treasury bill rate soon became the most sensitive indicator of changes in money market conditions.[33]

In short, whereas all the submarkets of the open market are broadly speaking marginal markets, some are more sensitive at different periods than others. The Treasury bill market has been the dominant submarket of the open market during most of the period studied in this paper. Thus, while it is legitimate to explain *general* movements in all the submarkets by subsuming them under the open market, it must be recognized that even this general explanation would need modification to allow for the varying sensitivity of the submarkets at different periods.

Choice of New York City customer loan rates to represent entire country. It is now convenient to explain the choice of the New York City customer loan market to represent the generalized relationship of all customer loan markets with the Treasury bill market. Actually there are numerous local customer loan markets all over the country. The *Federal Reserve Bulletins* provide data on average customer loan rates for New York City, Northern and Eastern cities, and Southern and Western cities. Broadly speaking, these three series have common fluctuations, though at distinctly different levels. Since, however, the large New York City banks directly serve the open market, they are the most sensitive reactors to changes in credit conditions, as reflected in open market rate changes. To a considerable degree, the greater rigidity (lesser sensitivity) of average customer loan rates outside New York City is due to noncompetitive features in the market structures of the various local markets throughout the country. New York City markets generally are characterized by a greater degree of competition, and, therefore, of greater price (or, in this case, interest rate) flexibility.[34]

The selection of the New York City average customer loan rate as a representative customer loan rate was, therefore, an expository convenience which revealed most sharply the nature of the relationships discussed in this paper. However, in customer loan markets characterized by relative rate rigidity, the direct and indirect impact of changes in the Treasury bill rate may take the form of credit rationing rather

[32] At the wartime peak, Treasury bills outstanding amounted to more than $17 billion.

[33] *Cf.* Federal Reserve Bank of New York, *Monthly Review,* October, 1937, p. 74; Federal Reserve Bank of New York, *Annual Report for 1937,* p. 10.

[34] The market structure in various types of customer loan markets is discussed by the present author in "The Market Structure of Commercial Banking in the United States," *Quart. Jour. Econ.*, Vol. LXV, No. 1 (Feb., 1951), pp. 62-86.

than a change in customer loan rates. From the point of view of effective credit control, such a result may even be preferable to the roundabout reaction in more competitive markets.

VI. *Concluding Observations*

The analysis of the relation between the Treasury bill market and the customer loan market has revealed that, under normal circumstances, parallel movement of rates in both markets is due to the fact that both markets respond to a common set of forces, the broad forces of demand and supply of short-term funds in the economy as a whole. Fundamentally, the Treasury bill market, in its rôle as a submarket of the open market, is marginal in a passive sense. However, were it true (as has been so often alleged) that bankers *always* prefer customer loans to open market investments, and thus, only *bona fide* surplus funds are invested in the open market,[35] changes in the open market could have no *direct* impact on rates charged in the customer loan market. For if banks always give priority to customer loans over open market investment-for-profit, and if banks hold no excess reserves, then the funds tossed on the open market are truly surplus funds. Under such circumstances, a (say) rise in open market rates would not directly affect customer loan rates, since there is no competitive interaction between them; bankers would not withdraw funds from the customer market to invest them in the open market. Therefore, the impact of open market changes on the customer loan market would, if anything, be indirect, *e.g.*, changes imposed on the customer loan market resulting from anticipations aroused by open market changes, *i.e.*, the open market changes might (especially if accomplished with official sanction and cooperation) act as a storm signal or fair-weather flag.

Although the lead-lag relationship between open markets and customer loan markets during earlier periods is fundamentally explained in terms of the passively marginal nature of the open markets, this explanation is inappropriate for what is roughly the same statistical relationship during the decade of the 'forties and up to the present. During this latter period, the Treasury bill market has grown to immense proportions and is very important in commercial bank portfolios. It is inaccurate to assume that only *bona fide* surplus funds are invested in Treasury bills; clearly, commercial banks hold Treasury bills because they are (risk considered) relatively profitable. Should the Treasury and/or the central bank permit (or bring about) an increase in bill rates, active competition for bank funds would ensue between the Treasury bill market and at least a part of the customer loan market.

[35] Above and beyond the amount necessary for protective investment, of course.

The existence of an indirect impact is by its nature less certain. It is under this new set of conditions that McCabe's statement implying a causal impetus from the government market to the customer loan market would hold. During the war and postwar period, it was commonly said that "debt management overwhelmed monetary policy." Under the conditions now emerging, it would appear that the huge national debt has itself made available a new tool of credit control to the monetary authorities.

At least one possible objection to this thesis should be anticipated in this paper. The analysis presented suggests that a change in Treasury bill rates would, *in and of itself*, constitute an independent technique of credit control. Some might object, having in mind recent monetary history, that it is not the change in bill rates which reacts on the customer market so much as the measures (especially open market operations) taken to bring about the change in the bill rate. For example, if the Federal Reserve should undertake to raise Treasury bill rates by actively selling bills on the open market, their price would fall and the pressure on bank reserves would likely also raise rates on the customer loan market. Neither this possibility nor its importance is denied. The point is that the effect of open market operations should no more be confused with the effect of a change in bill rates, *per se,* than the effect of open market operations when conducted in conjunction with rediscount rate changes. Indeed, in the latter case, the two instruments are typically used together; one reinforces the other.[36] Moreover, Treasury bill rates can change without any open market operations by the Federal Reserve. For example, a recent stiffening of bill rates was not a response to active intervention by the Federal Reserve in the open market for governments but was rather due to the withdrawal of supports from the government market. At a time when Treasury bill holders are trying to sell, rates will rise without Federal Reserve intervention, and both the direct and indirect impact of this increase would tend to raise rates on the customer loan market as well.[37] The central bank could re-enforce the market trend by appropriate open market operations, and such joint use of control techniques could give greater precision to the desired results.

The framers of the Federal Reserve System originally intended the rediscount rate to be an important credit control instrument. In retro-

[36] Mr. Currie has noted that ". . . rediscount rate changes 'back up' open-market operations." Lauchlin Currie, *The Supply and Control of Money in the United States,* second ed., revised (Cambridge, 1935), p. 102. Mr. Burgess has similarly remarked that "The open-market operations and rediscount rate are twin instruments used together." Testimony of W. R. Burgess, *Douglas Hearings,* p. 180.

[37] Some might hold that the lack of action by the central bank is itself a sort of "negative" open-market operation. Such a use of the term is at least novel.

spect, it would appear that reliance on that technique was never fully justified, and in recent years changes in the discount rate have been primarily important for their symbolic effect.[38] Whatever the current and prospective credit control efficacy of the discount rate, the Federal Reserve has now another credit control instrument in the form of the Treasury bill rate. This instrument combines all the symbolism of the rediscount rate with both a direct and indirect impact on the customer loan market. The necessary condition to the use of this tool is a return by the central bank to a policy of interest rate flexibility, as determined by changing economic conditions.

[38] Dr. Rosa has expressed the view that the discount rate may become more important in the future than it has been for several years. *Cf.* Rosa, *op. cit.*, p. 34.

The discount rate may become important in still another sense. Term-loans are becoming an increasingly important part of total bank loans, and many banks have begun the practice of tying term-loan rates to changes in the Federal Reserve discount rate. The discount rate would thus directly affect customer loan rates.

A SUGAR POLICY FOR THE UNITED STATES

By BORIS C. SWERLING*

The Sugar Act of 1948 has now been extended through December 1956, without major revision.[1] The need for Congressional action before the old law expired in 1952 might well have afforded an opportunity for reappraising the effects and objectives of a complex public policy. Unfortunately, that opportunity was largely lost.

Legislative action on this highly political commodity must have been followed at least as closely abroad as at home. One of the few major agricultural commodities produced domestically yet supplied substantially from foreign sources, sugar, like wool, is a sensitive indicator of American commercial practice. By preferential trading arrangements, private foreign investment, and ties of economic and political history, sugar links the United States with exporting countries in Latin America and the Orient. Possession of producing territories offshore places us, along with the United Kingdom, France, and Portugal, among those nations that draw imports from a sugar empire. Indeed, the main United States experience as a colonial power has been with sugar islands, both those which have become independent (Cuba, 1902; the Philippines, 1946), and those which have remained American territory (Hawaii, Puerto Rico). Military defeat of Japan brings still another sugar island (Formosa) within the orbit of American policy.

Although domestic sugar-beet production has been governmentally favored since its successful inception sixty years ago, and some segments of the industry for a longer period, a healthy world sugar market remains a positive American interest. In part, national security motivates that concern. Lack of sugar markets and resultant depression in Cuba would jeopardize the stability of that strategic Caribbean island. Besides, barriers against sugar trade must somehow be reconciled with the declared purposes of postwar United States foreign economic policy. On military and economic grounds alike, the United States Government, as recently as July 1950, has actively promoted a new international

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[1] Sugar Act of 1948, Public Law 388, 80th Congress, First Session, August 8, 1947; as amended by Public Law 140, 82nd Congress, First Session, September 1, 1951.

sugar agreement that would restrain protectionist measures in importing countries.[2] It is officially claimed that "a better understanding of the Sugar Act and its implications for an International Agreement might well soften some of the opposition now existing to the United States efforts for increasing consumption and increasing the share of world exporters in protected markets."[3]

In the United States itself, sugar protectionism is firmly established. The present law, which continues without serious alteration a policy initiated in 1934 and not violated in principle even during the war, has five main features. (1) Total consumption requirements are determined each year by the Secretary of Agriculture, in rough accordance with prescribed criteria. (2) The global figure, essentially an aggregate marketing quota, is precisely apportioned among continental, offshore American, and foreign producing areas. (3) An import-quota system thereby becomes the main instrument for protecting domestic producers and supporting the market price, although the tariff has not been completely eliminated. (4) When conditions warrant, individual acreage allotments to domestic growers may also be assigned, but at the Secretary's discretion and not by grower referendum. (5) Mainland and domestic offshore growers of sugar beets and sugar cane receive "conditional payments," direct subsidies financed by an excise tax on all sugar marketed in continental United States.

Some phases of sugar policy, particularly under a restrained administration by the Department of Agriculture, have had considerable merit.

If the principle of protecting sugar production is accepted, a system of direct subsidies has certain obvious advantages over an equivalent tariff. Subsidies, as J. S. Mill observed a century ago, are much clearer in their incidence than tariffs and consequently easier to control or even to scale down. An earlier sugar-subsidy program, initiated in 1890, was abandoned within four years precisely because of its excessive drain on the federal Treasury. Besides, if grower receipts per ton are to be (as they now are) some 20 to 25 per cent greater than the current price of sugar crops, the consumer is better served when the increase is not pyramided into the cost of refined sugar or sugar-containing products.

At the agricultural end, successive sugar programs have typically provided domestic growers with a floor rather than an umbrella, protecting their crop from heavy market pressure but not precluding all

[2] U. S. Dept. Agriculture, "Report to the Secretary of State from the United States Delegation to the Meeting of the International Sugar Council held at London, England, June 26-July 20, 1950" (mimeographed).

[3] *Ibid.*, p. 6. For comparable statements before a Special Committee of the International Sugar Council in London, March 4, 1952, see U. S. Dept. Agriculture, Production and Marketing Administration, Sugar Branch, *Sugar Reports* No. 15, April 9, 1952, pp. 44-49.

adjustment of output or every reduction in receipts. As a consequence, sugar beets in particular have served as something of an income hedge. Acreage tends to increase when other farm prices are unpromising but then to decline when farm conditions are generally favorable.[4] Furthermore, the quota system has not frozen the regional pattern of mainland production. The relative positions of California and Colorado as sugar-beet producers have been reversed between 1933 and 1950, California increasing from 15 per cent to 28 per cent, and Colorado declining from 24 per cent to 16 per cent, of the national total.[5]

The control system has operated smoothly and with moderation. Aggregate quotas have been set high enough, due in no small part to strong pressure from a substantial group of sugar-using industries, to permit the price of refined sugar to decline relative to the Bureau of Labor Statistics index of wholesale food prices.[6] There has been no sequence of temporary shortages and gluts, such as characterizes certain other controlled commodities, *e.g.*, recent experience with cotton. Under all conditions short of full-scale war, there has been sufficient flexibility to absorb even the sudden burst of consumer hoarding in 1939 and again in 1950. Such satisfactory results would have been technically impossible without continued reliance on imports. Specifically, excess or expanded capacity in Cuba has been called upon to meet any sudden increase in American requirements. When lower production is necessary, politically the responsibility for contraction can be placed more easily on her shoulders.

Yet the interests of Cuba, as a low-cost foreign supplier, have by no means been forgotten. Her prewar quotas in the United States market were some 20 per cent above the level of her sales under the Smoot-Hawley tariff, though far below that of the 'twenties. The Sugar Act of 1948 was for a five-year term, with the specific intention of granting Cuba a reasonable period for a downward adjustment from postwar production peaks. Recently, her quotas have been enlarged by a temporary expedient, at no sacrifice to domestic producers. By the Act of 1948 Cuba was allocated 95 per cent (now 96 per cent) of the amount by which the Philippines, whose sugar industry had been destroyed under

[4] Sugar-beet production climbed about 50% between 1929 and 1933 under the Smoot-Hawley tariff, but fell off more than 40% in 1943-44 as compared with 1938-40. U. S. Dept. Agriculture, Bur. Agricultural Econ., *Crops and Markets* (1950 ed.), p. 5. Its postwar peak came in 1950, when wheat and cotton were under production controls, but beet-sugar output again declined in 1951.

[5] U. S. Dept. Agriculture, Bur. Agricultural Econ., Crop Reporting Board, *Crop Production* (Annual Summary 1950), p. 83; and U. S. Dept. Agriculture, *Yearbook of Agriculture* (1935), p. 440.

[6] U. S. Dept. Agriculture, Production and Marketing Administration, Sugar Branch, *Sugar Reports* No. 11, June 27, 1951, following p. 6. More than 40% of domestic sugar consumption is in the form of processed foodstuffs.

Japanese occupation, falls short of filling its assured quota.[7] American financing of sugar shipments for foreign relief, occupation use, and the European Recovery Program further bolstered Cuba's exports to record levels after World War II. Also, progressive reductions in the sugar tariff since 1934 have been significant for Cuba, even more than for full-duty countries.[8] She, too, is the almost exclusive beneficiary of increases in consumption requirements.

Unfortunately, other features of the sugar-control system stand up less well under examination. Once the economic subtleties of the program are understood,[9] a number of criticisms can be supported and several myths disclosed as such.

Mainland sugar production cannot be enthusiastically defended, as it sometimes is, on grounds of military security and reserve wartime supply. During 1943-46, mainland sugar output was 20 per cent less than prewar and fell 30 per cent short of wartime production targets—a larger percentage deficit than for any other major agricultural commodity.[10] Emergency reserves are not an exclusively domestic matter, but depend on easy access to supplies from Cuba and the Caribbean. Cuba has filled its United States quota even during those exceptional periods when sales on world markets would have brought more remunerative prices.

In so far as subsidization of sugar beets and sugar cane is part of American "farm policy," benefits have been distributed rather differently than might reasonably have been expected. The average conditional payment to all beet growers in 1949 was a moderate $600, but it ranged from $250-$300 in Michigan, Utah, and Ohio to $3,000 in California.[11] More detail is available for some states in 1948. In Utah, 61 per cent of the total was paid in amounts of under $500, with 89 per cent of the payees in that category. In California, while 43 per cent of the payees received less than $1,000 each, almost 50 per cent of the total expended was in amounts of over $5,000.[12]

[7] The quota figure is 952,000 short tons, raw value, as specified in the Philippine Trade Act of 1946, of which not more than 50,000 tons are to be in the form of refined sugar. Recovery to prewar levels is expected by 1952.

[8] The present tariff on Cuban raw sugar is one-half cent per pound. At prices prevailing before the Korean war, that rate was equivalent to about 10 per cent *ad valorem*. To this should be added the half-cent excise tax, collected on foreign and domestic sugar alike, but accruing (in the form of direct subsidies) to Cuba's American competitors more than to the U. S. Customs. That fiscal loss is ignored by those who contend that the sugar program is "self-financing."

[9] For an excellent description of how the 1948 law was handled in Congress, but a weak analysis of its economic aspects, see William C. Pendleton, "American Sugar Policy—1948 Version," *Jour. Farm Econ.*, Vol. XXX (May, 1948), pp. 226-42.

[10] U. S. Dept. Agriculture, *Agricultural Statistics, 1947* (1948), p. 512. Cane production was maintained considerably better than beet.

[11] *Ibid., 1950*, p. 720.

[12] U. S. Dept. Agriculture, Production and Marketing Administration, Utah State Office,

Disparities among cane growers are even more striking. While Louisiana ranks roughly with the national average for beet, payments to individual Florida growers average $36,000; to Hawaiian, $8,000; and even to Puerto Rican (where small-scale cane growing has been promoted by auxiliary measures), $1,200. Without question, conditional payment benefits are accruing to large-scale commercial operations more than they are to the smaller farm enterprise whose interests farm policy, one may reasonably suppose, is mainly intended to promote. The data seem conspicuously to substantiate Schultz's view that "government payments do not effectively get at the income problem" in agriculture.[13]

Only to a minor extent, however, can the sugar program be properly regarded as "farm" legislation. There is convincing evidence that its main beneficiaries have not been growers but cane-sugar factories and beet-sugar processors, for whom it has meant both lower costs and higher returns. Were the price of sugar crops supported by the customary Commodity Credit Corporation loan device,[14] processors would pay more for their chief raw material than is necessary when growers receive direct subsidies. In 1936, the only year since 1934 in which conditional payments were not paid, processors paid growers a higher price per ton of sugar-beets than at any time in the decade 1931-40.[15]

Higher processor incomes have come from several sources. The selling price of refined sugar has been supported indirectly by the quota system. In the absence of direct subsidies to growers, there would be fewer beets for factories to process, at current prices for the refined product. As commercial growers, important processors have also directly received—or as landlords, shared—conditional payments. Fragmentary data indicate that it was possible for a single sugar corporation to receive, in fiscal 1948, almost $200,000 in Louisiana, nearly $550,000 in Florida, or more than that amount in Puerto Rico.[16] Payments go to some firms which would enjoy satisfactory profits in any case, but the Florida operation was unprofitable despite the heavy subsidy. These are recurrent annual expenditures, not unusual disbursements.

Annual Report, Farm Programs, 1948, p. 68; and California State Office, *Annual Report, Sugar Beet Program, 1948,* Table 5.

[13] T. W. Schultz, *Production and Welfare of Agriculture* (New York, 1949), p. 156.

[14] Technically, this would be difficult. There is no national commodity market for sugar cane or sugar beets, both of which are semi-perishable crops whose sugar content is extracted at industrial plants located within the farming regions.

[15] *Agricultural Statistics, 1946,* pp. 91, 95.

[16] Farr and Co., *Manual of Sugar Companies 1949-50* (New York, 1950), pp. 24 and 124; and United States Sugar Corporation, *Seventeenth Annual Report* (1948), p. 10. A detailed list of payments in excess of $100,000 to each of 39 cane-sugar companies on the 1948/49 crop is now available from U. S. Congress, Senate, *Congressional Record* (82nd Cong., 2nd sess.), Aug. 22, 1951, pp. 10722-23.

Mainland refiners of imported raw sugar receive rather different advantages from the program. In view of their relatively small price margin, the refiners' greatest financial risk is in inventory loss resulting from declines in the price of raw sugar. Apparently, the quota system has meant a steadier price for raws, as compared with either pre-quota years or world-market behavior.[17] Price stability as such is less important to beet-sugar factories or cane-sugar mills, since prices for sugar crops and even wage rates are frequently precisely related to returns from sale of the finished product.

Refiners are also the exclusive beneficiaries of specific quota limitations on imports of "direct-consumption" sugar that requires no further processing. Although the economic advantage of large-scale sugar-refining operations in consuming centers is frequently accepted without challenge,[18] refineries in various countries have buttressed their position for centuries with the help of governmental discrimination against imports of the refined product. No estimate of relative costs need be attempted here, but certain evidence from the experience of United States supply areas appears to be relevant. Between 1926 and 1933, Cuba's exports of raw sugar to the United States fell from 4,098,000 short tons to 1,082,000 short tons. Despite that precipitous decline, Cuba's shipments of refined sugar actually increased from 69,000 tons to 477,000 tons.[19] Direct-consumption quotas have reduced the volume to a lower level. Puerto Rico refiners are sufficiently convinced of their ability to provide refined sugar on a competitive basis that they have challenged the constitutionality of the quota limitation, unsuccessfully, before the United States Supreme Court.[20]

In making that decision, the Court was impressed with the problem of surplus refining facilities on the mainland before the initiation of quotas. The industry is estimated to have been operating at only 60 per cent of capacity in 1927;[21] it did worse in the years immediately following.

[17] Raw-sugar prices, c.i.f. New York, displayed neither the 1940 sag nor the extremely steep 1941 climb that characterized world raws, f.o.b. Cuba. They have also been less erratic since the outbreak of war in Korea. Relative stability of the New York price is at the direct expense of wider fluctuations in the world price: U. S. quotas tend to be enlarged when the world supply situation is tight and to be reduced when over-all supplies are abundant.

[18] *Cf.* Andrew van Hook, *Sugar: Its Production, Technology, and Uses* (New York, 1949), pp. 43-44.

[19] United States Cuban Sugar Council, *Sugar Facts and Figures* (New York, 1948), p. 100, based on data from the annual *Cuban Sugar Year Book* (Habana).

[20] Secretary of Agriculture *vs.* Central Roig Refining Company, *et al.*, 338 U.S. 604 (1950). "This court is not a tribunal for relief from the crudities and inequities of complicated experimental economic legislation" (*ibid.*, p. 618).

[21] U. S. Congress, Senate, Temporary National Economic Committee Monograph No. 18, *Trade Association Survey* (76th Cong., 3d sess.), p. 113.

Under the shield of successive sugar acts, the leading refining companies have now taken steps to correct some of the excess capacity. They last built a new plant in 1926, and have dismantled at least four major refineries since 1934, some immediately following purchase. But the legislation has not proved an entirely appropriate instrument for this purpose. In the process, returns have evidently been held sufficiently high to attract into the field several independents, especially innovators supplying liquid sugar to industrial users.

Clearly, then, sugar legislation is only to a minor extent "farm" policy. It more closely approximates a government-sponsored cartel arrangement for a processing industry. Former Secretary Anderson stated that the primary object of the act is to stabilize the "sugar producing, refining, and importing industries."[22] The main details of the 1947 Bill were drawn up jointly by the Department of Agriculture and the various producer associations, the sugar-using industries excepted. At the public Hearings, all major domestic groups—beet, mainland cane, seaboard refiners, Hawaii, and Puerto Rico—were represented by a single agent, and it was to him that the Secretary turned, at one point, for an explanation of "what the drafters had in mind."[23]

Apparent inconsistencies between the sugar program and anti-trust policy are matched by a further conflict with important principles of United States foreign economic policy. Basic quotas established in 1947 for the mainland, Hawaii, Puerto Rico, and the Virgin Islands, amounting to 4,268,000 short tons, raw value, exceeded their maximum combined output in any previous year. The figures for Hawaii and mainland cane and beet are permissive rather than restrictive, practically identical with maximum past output. To that extent, outlets for imported sugar are reduced. Puerto Rican output was more severely curbed, although that island is one of the lowest-cost duty-free areas, as demonstrated by its ability to export even to the world market.[24] Her quota has been raised 170,000 tons under the new amendment, though at the further expense of foreign suppliers. The Secretary of Agriculture's claim that present quotas represent "fair shares" for domestic and foreign producers[25] is therefore reasonably open to question, and a quite generous

[22] U. S. Congress, House Committee on Agriculture, *Sugar Act of 1948* (Hearings, 80th Cong., 1st sess.), p. 27. Somewhat ironically, the quota system began in the very year when the Department of Justice won its anti-trust case against the sugar-refining industry. See United States *vs.* Sugar Institute, 15 Fed. Suppl. 817 (1934), and Sugar Institute, Inc. *et al. vs.* United States, 297 U. S. 553 (1936).

[23] *Hearings*, p. 24. The same agent spoke for the entire industry at Congressional hearings in 1951. U. S. Congress, House Committee on Agriculture, *Extension of Sugar Act of 1948* (Hearings, 82d Cong., 1st sess, on H.R. 4521), pp. 143 *et seq.*

[24] *E.g.*, *Weekly Statistical Sugar Trade Journal* (New York), Jan. 11, 1951, p. 10.

[25] U. S. Dept. Agriculture, Press Release 464-51, Feb. 26, 1951, p. 12.

escape clause in the General Agreement on Tariffs and Trade appears to be violated.[26]

For external and domestic reasons alike, the sugar program clearly warrants a degree of reconsideration which it has not yet received. Even within the framework of a quota system combined with direct payments to growers,[27] much could be done to confine the amount of domestic subsidization, re-channel benefits within the sugar industry, and encourage the supply of sugar to the United States on an economic basis. Change might intelligently proceed along the following lines.

1. *A ceiling on the total direct subsidy.* Between 1937 and 1949, annual expenditure for conditional payments to domestic growers rose from $36 million to $61 million.[28] Congress might at least consider freezing that figure at its existing level, preferably lowering it, or, better still, scheduling further reductions at specified dates. Growers as well as processors enjoy the price-supporting effects of the quota system in any case.

2. *A ceiling on the total subsidized production.* Legal quotas for domestic producers have also increased during the life of the program. Reducing the total subsidy might by itself prevent any further displacement of foreign sugar. But the matter might also be approached frontally. A binding limitation on the total amount of subsidized production could reasonably be laid down, and at figures less than previous historical maxima. The rate of subsidy, as contrasted with its aggregate amount, might be inversely related to total domestic sugar production, in order to positively discourage undue expansion of output. A special quota might then be set aside for non-subsidized domestic production.

3. *Revised scale of benefits to individual growers.* Existing subsidies benefit large-scale growers more than appears to be intended. Deductions from the base rate, 80 cents per 100 pounds of raw-sugar content, are made at higher individual outputs. Even for sugar beets, the scale of deductions, ranging from zero at 350 tons to less than one-third at 3,000 tons and under one-half at 30,000 tons, seems amazingly mild. Taking the national average yield as two short tons of equivalent raw sugar per harvested acre,[29] the limits correspond to 175, 1,500 and 15,000 acres. These are to be compared with estimates of average acreage in sugar beets per farm (in 1944): 8 acres in Utah, 11 in Idaho, and only

[26] United Nations, *General Agreement on Tariffs and Trade* (New York, 1947), Article XI 2 (c) (i). Quantitative restrictions on agricultural imports are permitted when essential to government measures that "restrict" production or marketing of the domestic article.

[27] In the Wheat Act of 1932, the United Kingdom provided deficiency payments to growers without an import-quota system, thereby subsidizing the domestic producers of an imported foodstuff without substantially raising the price to the consumer on wheat obtained from abroad. *Wheat Studies of the Food Research Institute*, Vol. IX (July, 1933), pp. 330-40.

[28] *Agricultural Statistics 1946*, p. 661 and *ibid. 1950*, p. 720.

[29] *Ibid. 1950*, p. 93. Yields are somewhat higher in California.

84 even in California, where individual operations are typically on the largest scale.[30]

Three revisions would seem entirely appropriate. Deductions might well begin at a much lower sugar output, one that properly distinguishes large-sized beet operations; the scale might be given a steeper graduation; and an absolute ceiling might then be placed on the amount payable to any one recipient, whether as landlord or as grower. Large-scale farm enterprise would then prosper as its economic merit, rather than government favor, dictates.

4. *Separate treatment for sugar cane and sugar beets.* Beets are produced mainly in Western irrigated valleys, where they complement a diversified farming operation, in sharp contrast with the economy of cane whether by plantation system in Hawaii, company agriculture in Florida, or share-cropper arrangement in Louisiana. Size of the operating unit, sugar yield per acre, importance to a regional economy, and the very justification for subsidization[31] are quite different for the two crops.

Already domestic producing regions are given differential treatment by the allotment of quotas. The program's officials have the additional responsibility of setting, for various localities, the minimum price that grower-processors must pay for purchased cane or beets, and minimum field wages. Little further administrative difficulty would be introduced if benefit payment per 100 pounds of sugar were now differentiated as between cane and beets. The maximum subsidy per payee and the graduation of deductions might also be specified separately for the two crops. In establishing the new scales, some attention would of necessity be paid to the economic realities of sugar-crop production.

5. *A new price target.* No specific legal or economic content attaches to the legislative prescription to seek prices "that will not be excessive to consumers and which will fairly and equitably maintain and protect the welfare of the domestic sugar industry" (Section 201). The setting of total consumption requirements is a discretionary process, and might as well be frankly recognized as such.

Certain guides to administrative decision can be meaningful. Continental consumers were formerly given a minimum assurance, not reenacted in the 1948 law, of "a per capita consumption equal to the average of the two-year period 1937-38."[32] However, protection of consumers still springs from the bargaining strength of sugar-using industries.

[30] H. Fisk Phelps, "The Sugar Beet Industry in the Twelfth Federal Reserve District," Supplement to *Monthly Review* (Federal Reserve Bank of San Francisco), April 1951, p. 4.

[31] Subsidies on Philippine sugar after 1937 did not go to private companies at all, but rather to public authorities for financing general economic development. The same technique might be even more appropriate in Puerto Rico.

[32] Public Resolution No. 104, 76th Congress, approved October 10, 1940. The period 1935-36 had been designated in the Sugar Act of 1937.

A large and increasing portion of sugar consumption has come to be in the form of manufactured bakery products, soft beverages, confectionery, ice cream, and canned and preserved foodstuffs. The relevant industrial groups naturally press continually for higher sugar quotas. Nevertheless, estimated sugar consumption in the United States, through 1951, has surpassed the per-capita peaks of the 'twenties only in 1941, when hoarding was the dominant factor.

The Sugar Act of 1948 replaced a consumer-protection clause with a producer-oriented parity formula. This parity provision might well be repealed. It employs the base period January-October 1947, when sugar was at its highest price of the inflated 'forties. By specifying the wholesale price of refined sugar, the clause extends the protection of the farm-parity principle to such industrial processors as sugar refiners, beet-sugar factories, and sugar-cane mills. Fortunately, the sugar administrators have not pursued this price target too zealously.

An entirely new criterion could be economically justified. The height of the duty-paid New York price above the equivalent world price for raw sugar reflects the protective margin under a quota system. With a tariff law, that margin is precisely specified. The maximum price premium to be maintained under quotas could be similarly designated. During the 'thirties the price of raw sugar per pound in New York ex-duty was held as much as 1.50¢ (or over 100 per cent) above the London price. Postwar reduction of the tariff on raws to one-half cent might now be complemented by a moderate price target in enforcement of quotas.

Several desirable results could be expected to follow. The government's commitment to the industry would become more precise, and invite revision downward in due course. No longer would the United States be largely insulated from world market developments. If world sugar prices fall because of improved efficiency abroad, American consumers would benefit and American producers would be exposed to an appropriate degree of competitive pressure. Should world prices be temporarily depressed for other reasons, the United States would become directly interested in correcting a situation that is not in any case independent of American sugar policies. A new international sugar agreement that merely acquiesces in and reconciles restrictive national policies is clearly a less satisfactory alternative, partly because the burden of adjustment is placed on countries least able to bear it.

6. *Relaxation of direct-consumption quotas.* Perhaps the least defensible feature of the entire program is the direct-consumption quota. It opens the United States to the serious charge—one not without its own counterpart in earlier American history—that a metropolitan country is denying to its raw-material supplying areas a kind of industrial proc-

essing entirely appropriate to their resources.[33] The United States is beginning to undertake a broad program of technical assistance to less developed nations. She has become the world's leading commercial nation. It is hard to see how her immediate or long-run interests can justify artificial support to mainland refining operations, if these cannot compete even with duty-free offshore producers.

Congress would have found 1951 a propitious time for liberalizing refined-sugar imports. Much seaboard refining capacity is old and has paid for itself. Two projects for replacing obsolete facilities have recently been postponed because of high building costs.[34] If mainland refining operations decline in spite of a quite modest margin of tariff protection, a shift to other industrial activities, in which America's superiority over under-developed areas is less questionable, is to be welcomed.

These proposals represent changes in sugar policy appropriate to a changing position of the United States in the world community. The industry would continue to enjoy an impressive list of favors: a low tariff that protects all domestic groups and penalizes import of the refined product, assured volume for producing regions under quota privileges, direct subsidies to growers (including some grower-processors), and price-stabilizing features of the quota system.

Even to progress this far, a clearer sense of purposes is much to be desired. If large-scale agricultural operations are to be particularly subsidized, the program ought not to wear the guise of one serving the small independent farmer. Good reasons ought to be given for, and limits assigned to, subsidization of sugar-crop processors. The extent to which freedom of enterprise has given way, in the industrial as much as the agricultural sector, to government price-fixing and allocation of markets, ought to be recognized.

From an international point of view, the issues appear rather different. Are the advantages of an expanding volume of international trade so trivial that the United States will be satisfied to pay a higher and higher subsidy for a larger and larger volume of domestic sugar? Is our concern for the economic development of less advanced countries so superficial that the United States will continue to block appropriate industrial processing in exporting countries? Questions such as these dig deep to the roots of America's foreign economic policy. By Congressional action on measures like the Sugar Act, America's commercial intentions are judged and her international leadership exercised.

[33] The United States can expect to hear more on this theme in the future, so far as other commodities are concerned. Even in the sugar field, Cuban producers complain that the tariff on industrial alcohol requires them to ship by-product blackstrap molasses in its raw form, although processing facilities were built on the island during the war.

[34] *Cf.* Farr and Co., ***Manual of Sugar Companies 1949-50***, p. 11.

REARMAMENT AND A MORE FLEXIBLE TARIFF STRUCTURE FOR THE UNITED STATES

By Karl Pribram*

In connection with the discussion of the Rearmament Program it has been suggested that a certain flexibility be introduced into the structure of our import tariff. The reasons advanced in favor of such a policy are easy to understand. Under the pressure of a large-scale rearmament effort of considerable duration, the production of many marketable commodities is bound to be reduced for a number of years whereas the purchasing power of considerable groups of the population is likely to be increased perceptibly. Hence it is a tempting idea to lower or to eliminate the duties on certain commodities until such time as expanded production could again catch up with the demand. Impending reductions in standards of consumption could then be alleviated; a desirable outlet could be found for enhanced purchasing power and the size of a dangerous "inflationary gap" could thus be reduced.

There are, of course, a number of questions which deserve careful consideration in order to arrive at a reasonable appreciation of the effects which can be expected to result from the introduction of such a flexible tariff. Since an over-all tariff reduction can hardly be contemplated, the questions arise as to how to proceed in selecting the commodities the importation of which could be promoted through temporary relaxation of existing duties? And how to assess the effects of the reductions (a) upon the volume of imports; (b) upon the prices of the commodities whose protection against foreign competition would be reduced? (c) upon the economic conditions of the countries which would be the sources of increased exports? Any final judgments upon the deflationary effects of tariff reductions would depend upon the answers to these questions.

From the outset it appears advisable to emphasize the specific meaning which attaches to the term "flexible." A flexible tariff structure means a system of import duties which can be adjusted to changing conditions. Hence in order to give more or less precise answers to the questions raised, it is necessary to make certain assumptions as to the conditions which are likely to prevail during the execution of the Rearmament Program.

* When this paper was prepared, the author was on the staff of the Tariff Commission, Washington, D.C. But the views stated are exclusively his personal views.

The duration of the rearmament period may be tentatively estimated at four to five years. The operational defense budget is calculated to level off, after the initial build-up of arms, at around $35 to $40 billion a year. During the period of the intensified rearmament effort the United States might be involved in local conflicts such as the Korean war, but it is assumed that the existing international tensions will not result in a world-wide conflagration. Such a conflagration would render any tariff policy quite meaningless. It can further be anticipated that under the pressure of the rearmament program shortages of important raw materials and manpower will make themselves felt not only in this but also in the majority of the countries attached to the North Atlantic Pact; that owing to the considerable increases of the armed forces and diversion of productive activity to armament purposes the structure of the various national economies will experience significant changes. The terms of trade can be expected to move in favor of countries that are sources of indispensable supplies of raw materials. Appropriate measures will be taken in order to provide for an adequate distribution of these materials among the countries which are outside the Soviet orbit. The huge current American demand for raw materials will be enhanced by the requirements of stockpiling. Declining American exports sold on a commercial basis are likely tc result from the allocation of resources to the armament industries. Interest rates will be kept relatively low, especially in this country. Inflationary trends must be considered highly undesirable but practically inevitable concomitant circumstances of these developments. Only the future can tell to what extent this broad picture will correspond to the actual course of events.

It is obvious that a system of flexible tariffs can be administered only by the Executive; the mills of the legislative bodies are grinding far too slowly to adjust tariffs to changing situations. It is, on the other hand, practically certain that existing legislation does not provide authorization to reduce customs duties by administrative procedures in conformity with the idea of flexible tariffs. Section 318 of the Tariff Act of 1930 permits free entry of food, clothing and medical, surgical and other supplies needed for relief work in emergency cases. Somewhat broadly interpreted, that permission was applied to the free entry of lumber and lumber products to relieve shortages of these materials as recognized by the Veterans Emergency Housing Act of 1946. It is very doubtful whether under this section the President could be considered authorized to suspend duties on a large number of commodities during the emergency created by the defense program. It is equally doubtful whether the authorization to suspend duties in exceptional situations also covers the right to reduce such duties over lengthy periods.

Other provisions, such as those contained in the Naval Appropriations

Act of June 1914 and the War Powers Act, need not detain us since under these provisions duties can be suspended by Executive action only when government agencies are the importers of the goods. Hence legislative action is prerequisite to the introduction of a flexible tariff structure.

Such action has been strongly recommended in the Gray Report on Foreign Economic Policy. The arguments in favor of that recommendation were summarized in the following passage: "Although United States imports will increase under the impact of rearmament, our need for imports will increase even more rapidly. The outlook for the immediate years ahead is one of labor and material shortages, cut-backs in non-military production, and a persistent upward pressure on prices. Increased imports may alleviate some of these shortages and help to keep inflationary pressures in check. Nor is it necessary, at this stage, when nearly all industries find buyers clamoring for their products, to maintain high import barriers in order to safeguard the position of import competing industries. There is a need to reduce import barriers not only to reduce our already strained sources of supply, but, by increasing the possibility of dollar earnings by Western European countries, to limit their requirements for economic assistance from the United States in support of their own enlarged military programs. . . . What is required is *temporary emergency legislation* to make possible *quick* and *unilateral* reductions in specific tariff rates on commodities which are scarce and when conditions of inflationary pressure exist. Authority might be granted to the President for a limited period of time to reduce or eliminate any rate of duty on these grounds, provided that such action would not cause serious injury to any American industry or economic group. Alternatively, the grant of authority for temporary reduction might be made for an indefinite period, with the proviso that it could be withdrawn at any time by joint resolution of the two houses of Congress. There are other possible formulas that could achieve the desired end and that deserve consideration. Congress should be requested to provide the necessary emergency authority at the earliest possible opportunity."[1]

Given the protectionist atmosphere which surrounds considerable fractions of our legislative bodies, it is probable that the President's authority to adjust tariffs to changing conditions would be hedged in by various clauses designed to restrict his discretionary power to specific fields, and to provide for remedial action in cases in which the interests of important groups of producers might be adversely affected by increasing imports.

[1] *Report to the President on Foreign Economic Policies* (Washington, Nov. 10, 1950), pp. 77-80.

Let us assume that the President will be granted the desired authority. What reasonable use could the Executive make of it and what effects could be expected to result from such a policy? It may be recalled from the outset that under the rule of the Tariff Act of 1930 the structure of American imports has experienced significant modification. When the years 1933 and 1934, the period of deepest depression, are left out of account, the dollar value of duty-free imports fluctuated up to 1945 between 63 and 70 per cent of the value of total imports. The noticeable decline in that percentage which set in after 1945 has reached 55 per cent for 1950. Two categories of commodities have formed the bulk of the duty-free imports: on the one hand, consumers' goods of which there is no domestic production, such as coffee, tea, cocoa; on the other hand, raw materials and semi-processed goods which have to be imported in order to satisfy the requirements of domestic industries. Wood pulp, newsprint paper, fibers, tin, scarce mineral ores belong to this group. From the studies made by the Department of Commerce it is known that these imports have fluctuated in proportion to the expansions and contractions of the national income.

It is therefore apparent that tariff reductions or suspensions of duties can be applied only to commodities the import value of which amounts to far less than 50 per cent of total imports. The question of how our supply situation and the competitive conditions of our industry might be affected by substantial unilateral removal of import restrictions cannot be answered without extended investigations. But from the available material some general conclusions can be drawn.

1. It could be argued that suspension or reduction of duties imposed upon manufactured goods might result in a perceptible diminution of the imports of the materials which are being used by the industries now engaged in the manufacture of these goods. The advantages which are likely to result from such a change in the structure of imports would mainly consist in increasing indirectly the supply of labor available for the production of armaments. Radical effects of that kind are, however, improbable. In view of the strong competitive position of American industries in their domestic markets, it is unlikely that, even if all import restrictions were suspended, the domestic industries which account for the bulk of the consumption of imported materials would have to curtail perceptibly their production. There are, however, some exceptional cases in which suspension of duties would result in modifying the present structure of imports. Thus, if leather could be freely imported, Argentine manufacturers might increase their leather exports to the United States, and exports of hides and skins would be reduced correspondingly. Increased imports of refined sugar would be reflected in reduced imports of raw sugar for refining purposes.

2. As mentioned above, less than 50 per cent of all imported commodities belong to the category of dutiable imports. The value of the latter imports accounted for about $2.7 billion in 1949 out of a total import value of $6.6 billion. In order to appreciate the effects of possible tariff reductions on the volume of imports, the value of the dutiable imports in 1947 has been subdivided according to the level of the 1950 rates of duty applicable to the various tariff classifications. That analysis shows that the *ad valorem* equivalent of duties was 10 per cent or less with regard to about 45 per cent of dutiable imports. Almost an additional 33 per cent consisted of commodities which were subject to duties between 10 and 20 per cent. Another 20 per cent of dutiable imports was composed of commodities with *ad valorem* duties ranging between 20 and 40 per cent; only for about 3 per cent of these imports was the *ad valorem* equivalent of duties higher than 40 per cent. These calculations, made for 1947, are the most recent that are available; hence, they do not exactly reflect the present situation. Since a large number of dutiable commodities are subject to specific rates of duty, the *ad valorem* equivalent of these duties has been perceptibly reduced by the price increases which have taken place since 1947. A reclassification of the commodities based on more recent price reports would probably show somewhat higher percentages for the categories within the lower ranges of duties.

Although in some cases even a relatively low rate of duty may have a perceptible restrictive influence on the volume of imports, it can reasonably be assumed that, broadly speaking, such an influence is the greater, the higher the duty in relation to the value of the imported commodity. Out of the commodities on which import duties in excess of 20 per cent are being levied may be selected those which account for a substantial proportion of total imports. Among the commodities subject to duties beween 20 and 30 per cent are opium, watches, zinc ores, cigarette leaf tobacco, scrap tobacco from Cuba, tuna fish in oil, unbleached cotton cloth and oriental rugs. Rates higher than 30 per cent are applied to tungsten ore, watches, cigar wrapper tobacco, almonds, whiskey and particularly combing wool of various grades, woven wool fabrics, silk fabrics, laces and embroideries. Such enumeration shows that the group is highly selective and incongruous. It includes only a few items such as tungsten ore, which are strategically important for defense purposes. But it is doubtful whether the authorization granted to the President would be far-reaching enough to be applicable to a considerable group of commodities which are protected by duties exceeding 20 per cent *ad valorem*.

3. The problem of temporary unilateral tariff reductions can also be approached from another angle. The dutiable commodities can be

grouped in accordance to the probable effects of tariff reductions or suspensions upon (a) the volume of imports and (b) the domestic price structure. It has, of course, been impossible to undertake the exhaustive investigations which would be required in order to give precise answers to these questions, but some general observations can be made for illustrative purposes.

A considerable group consists of dutiable commodities which are indispensable for the execution of the defense program, and will have to be imported in far larger quantities than under normal conditions. Nonferrous metals and minerals such as aluminum, copper, zinc, lead, manganese, nickel, bauxite, chrome, mercury, mica belong to this group; extra-long-staple cotton, wool, canned beef and lumber can also be included. The volume of these imports will not be affected by the level of duties. When required under the defense program, many of these products might be imported duty-free for government account. This entire group of commodities can be left out of account in a discussion of the influence of flexible tariffs on the volume of imports.

The same is true of another group which is composed in part of commodities directly needed for defense purposes. It consists of commodities the import volume of which will probably be fixed by political decisions, regardless of the level of duties imposed on these imports. Tungsten, bristles, feathers belong to that category. On the other hand, decreases in the importation of iron and steel scrap, pig iron, structural iron and steel can be expected to result from export restrictions administered by countries which will need these materials for the execution of their own defense programs.

Turning to the question whether reduction or suspension of the duties levied on the imports so far considered would significantly affect the prices of the commodities concerned, the answer would probably be in the negative. The duties levied on these goods are, as a rule, relatively low—below 20 per cent, in many cases even below 10 per cent—the demand for imports, however, is very strong compared with the supply; hence, the importers would hardly adjust their prices to the reduction of the duties. In some cases in which differences in prices have obtained between foreign and domestic products, these differences might be eliminated.

Another group of imports which deserves special consideration in a discussion of a program of flexible tariffs consists of agricultural imports. As distinct from all other commodities, the prices of many agricultural products have been made the object of specific regulations under the Agricultural Adjustment Act. Not only tariff duties but also direct quantitative restrictions of imports have been applied to some key products. Administrative authority to impose such restrictions on

these and other products is an essential element of the price support program. It is extremely doubtful whether Congress would be inclined to revise that program and perhaps jeopardize the structure of agricultural prices in favor of a reduction or suspension of existing tariffs. The effects upon the different kinds of products of such a measure would vary widely; these effects can hardly be estimated with reasonable accuracy; but, broadly speaking, their impact would probably be considerably less for the next years to come than under normal conditions, because of the greatly increased international demand for agricultural products and the attendant increases in their prices. It can be anticipated that flexible tariffs would be applied, if at all, to only a relatively small number of carefully selected and hardly important products of that kind.

4. The range of commodities which can be seriously considered for inclusion in a program of flexible tariffs has thus been cut down perceptibly, although it is still quite extensive. It comprises a large volume of goods of civilian consumption which might be in short supply when materials, production facilities and labor are increasingly diverted to warlike preparations. It can be assumed that increased imports of such commodities might be determined less by the readiness of the American market to absorb increasing quantities of imports than by the ability of the exporting countries to increase their production of such goods substantially. In the countries participating in the execution of the defense program labor will be diverted to defense industries and important segments of the labor force will be assigned to military service. Some industries which would otherwise be available for the production of export goods will be charged with production of military equipment. In many cases shortages of materials combined with shortages of labor supply will definitely prevent the expansion of existing export facilities. European countries are the main source of supply of manufactured commodities, but unemployment on a noteworthy scale in Europe exists only in Germany and Italy. In both countries substantial increases in production are hindered by the lack of capital. It is also to be kept in mind that under a system of flexible tariffs, suspensions or reductions of duty are of limited duration. Foreign manufacturers could hardly be expected to make considerable investments in order to enjoy the advantage of an export market of limited duration. It is probable that in order to increase exports to the United States, sales in other markets would have to be reduced in many cases.

Increased supplies of foreign commodities would undoubtedly contribute towards improving civilian consumption, probably at prices lower than those which would otherwise be in force for similar commodities, although considerable differences would obtain as to the de-

gree to which reductions in tariff would be reflected in reductions in prices. Very much would depend on the receptivity of American markets for foreign commodities, on the nature of outside competition, on the quality of the imported goods, on the general conditions of demand for and supply of the various commodities.

Economic theory teaches that the effects of tariffs on the one hand depend upon the elasticity of demand and supply, and on the other, upon the absolute amount of supply and demand, in the importing and the exporting countries.[2] Similar considerations apply to the reduction of protective duties. Where the United States already provides a notable market for foreign high-priced goods of the luxury or semi-luxury category, it is more likely that foreign producers, hardly capable of increasing their production perceptibly, would not attempt to increase exports but would rather take advantage of tariff reductions by enhancing their profits.

There would remain, however, a considerable category of consumer goods the imports of which might be affected in varying degrees by tariff reductions not only as regards the volume, but also with respect to prices. These goods can generally be described as commodities of fairly widespread consumption not requiring considerable investment nor the importation of scarce material. Import goods of this type are earthenware, table glassware, nonrubber footwear, wool wearing apparel, plywood, and paperboard. But large increases in the volume of imports and substantial price reductions could be expected to take place also where the duties have resulted in preventing or severely curtailing exports. In such cases the comparative advantage of foreign producers which has been counteracted by the duty is frequently due to lower wages, whereas the level of efficiency is approximately the same for foreign and domestic production. Certain chemicals, laces, embroidery, cutlery, surgical and scientific instruments and certain optical goods are instances in point. The argument of "wage dumping" has played a considerable rôle in the reasoning of the American defenders of protectionist duties; the renewed attempt to include the "peril point" clause among the provisions of the Trade Agreements Act has been largely motivated by arguments of that type.

It is hardly possible to determine at the present state of our knowledge, how far domestic production would be displaced from its markets through increased foreign imports. Elimination of protection would enhance the existing tendency towards mass production. If, however, as suggested in the Gray Report, no tariff reductions should be applied which would cause serious injury to an industry, the sphere of reductions would be greatly restricted.

[2] See G. Haberler, *Theory of International Trade*, London, 1936, p. 230.

Increased supplies of consumption goods available at prices which might be lower than those paid for similar domestic products would somewhat counteract the existing inflationary trends. But in view of the limited range of commodities and of the prices which might be affected by increased imports, no substantial deflationary effects can be expected to result from tariff reductions. For the same reason it can hardly be anticipated that additional dollar exchange accruing to foreign countries through enlarged exports to the United States would substantially improve their balance-of-payments position. As already mentioned, in view of the strictly temporary nature of the proposed tariff reductions, enlarged production for these exports would probably be kept within relatively narrow limits.

Such a consideration leads to a general question which, although related to a more or less remote future, deserves careful consideration. The question of how the readjustment is likely to take place after the tariffs will have again been restored to their present levels. The return of the economy to more normal conditions, after the termination of the intensified defense effort, might be spread irregularly over the various lines of production; it is quite likely that at a relatively early stage of reconversion heavy pressure might develop in favor of re-establishing the earlier protection for certain industries, and intricate problems of foreign economic policy might result from such a situation which could easily introduce discriminatory features into the treatment of our trade partners.

In pursuance of that line of reasoning, it will perhaps not be amiss to examine the problem of tariff flexibility from a broader angle, as an element of general foreign economic policy. In the history of that policy the idea of tariff flexibility has played a varying rôle. During the Mercantilistic period flexible tariffs were resorted to in order to adjust the supply of vital necessities, especially of grains to changes in domestic production. The so-called sliding-scale duties used under the English Corn Laws from 1463 to the repeal of those laws in 1846 were the most outstanding instance of this type of flexible tariffs. Their purpose was, however, stabilization of prices, and neither the methods used for implementing them nor the experiences gained from them are likely to provide assistance in solving our problem.

When the reasoning of the Mercantilists was replaced by the philosophy of the classical economists, a static conception of the economic system was combined with a firm belief in self-regulating forces tending persistently to establish equilibrium between all relevant economic magnitudes, in the national as well as in the international sphere. Hence it was held that the indispensable legislative and administrative framework within which these forces were supposed to operate should be as

stable as possible in order to provide a firm basis for the assumptions and expectations underlying productive and marketing activities. On the other hand, greatest possible freedom of action was requested for these activities in order to secure perfect, flexible adjustment of the economic machinery to changing conditions of production and marketing. In the sphere of international economic relationships a rigid framework was established by the operation of the gold standard which imposed maintenance of fixed exchange rates at the risk of considerable fluctuations of the national price and income structures. Tariff policy was ruled by the same principle. Tariffs were set up for indefinite periods and subsequently were to a large extent bound in the course of tariff negotiations designed to fix for prolonged periods (as a rule ten years) the over-all pattern of the tariff structure.

The organization of international trading, which was based on these principles, was seriously undermined in the course of the First World War and its aftermath. The League of Nations attempted in vain to bring about a return to these principles. Tariffs were generally increased to relatively high levels and tariff agreements were concluded for relatively short periods. It was obvious that the governments of most countries desired to have a free hand in adjusting tariffs to changing conditions. Simultaneously the gold standard was made the object of increasing attacks. The belief in the automatic operation of equilibrating economic forces had ceased to determine foreign trade policies. That belief received another blow under the impact of the depression of the 'thirties even in the countries that were not affected by the spell of totalitarian philosophies. The idea of bilateral trading which implied a breaking-up of the international trading community and the conclusion of short-term bargaining arrangements between pairs of countries, gained widespread recognition. Combined with exchange control, bilateral trading led to the disruption of the international system of interdependent prices; it relegated tariffs to a subordinate place among the methods of foreign trade policy and practically replaced them by the far more flexible measures of quantitative import restrictions and regulations.

The trends in economic reasoning which had emerged in the interwar period were accentuated rather than weakened through the effects of the Second World War. What has been termed the "Keynesian Revolution" was in many respects a theoretical justification of the abandonment of the belief in the self-regulating economic forces. In due course the economic philosophy of the classical economists was superseded in large sectors even of the Western World by the philosophy of the "planners" which has been the object of extensive discussions. That philosophy is likely to find considerable support under the defense

program. There is no doubt that the implementation and execution of such a program requires a far higher degree of planning than might be advisable under peacetime conditions.

A counterpart to the philosophy of the planners is formed by the philosophy of the "adapters" who think it necessary currently to adjust the economy, through flexible administrative measures, to changing conditions of production and marketing. That approach is, however, faced with the danger of introducing into the economic policy a considerable degree of arbitrariness, enhanced by political pressures of all sorts. Short-run considerations are likely to prevail in determining the decisions of the Executive since long-run effects can hardly be foreseen with an adequate degree of accuracy. Least justified would be the assumption that the situation which had existed at the time when a flexible method was adopted, could ever be restored. Hence flexible economic policy means continuous sailing on a sea of unforeseeable possibilities.

The idea underlying flexible tariffs is a brainchild of that philosophy. When operated on a large scale, a system of flexible tariffs would lead to alternating expansions and contractions of the imports of dutiable commodities and thus enhance the instability inherent in the international exchange of many goods. It might be worthwhile to survey the development of the Trade Agreements Program in the light of these considerations. That program was originally conceived as an emergency measure designed to promote, after the collapse of the export boom of the 1920's, the foreign sales of American manufacturers through bilateral tariff concessions.[3] In due course, however, the objectives of the program experienced a significant modification. It was transformed into an instrument for re-establishing the principles of multilateral trading and nondiscrimination in accordance with the economic philosophy inherited from the classical economists. That transformation, which started before the Second World War, was accentuated after its termination. The principles underlying the Trade Agreements Program were incorporated in the Draft Charter of the International Trade Organization and in the General Agreement on Tariffs and Trade. But the negotiations which have turned on the formulation of the provisions of the Draft Charter have evidenced the strong influence exercised by the idea of flexibility of economic measures upon modern economic reasoning. That idea has pressed its stamp also upon the organization of the International Monetary Fund.

An element of flexibility has been introduced even into the operation of the Trade Agreements Program through the inclusion of the so-called

[3] There existed no clear coordination of the domestic economic policy of the "New Deal" and the foreign trade policy.

"escape clause" in the bilateral trade agreements, a clause which permits each trade partner to withdraw tariff concessions under specified conditions. With the introduction of a system of flexible import duties the commercial policy of the United States would enter a new stage in which the method of granting more or less equivalent mutual tariff concessions would be supplemented by the method of establishing unilateral reductions for limited periods. One can speculate about the compatibility of two methods which reflect different economic philosophies.

If it were politically feasible, it would perhaps be more advisable from an economic point of view to use the present situation for scaling down for indefinite periods—and without any reference to the idea of flexibility—the duties on certain commodities in accordance with the strategic objectives of a long-range defense program to be devised and implemented through negotiations with the other partners of the North Atlantic Alliance. It is very likely that, even after the termination of an intensified rearmament effort, the Western democracies will have to bear the burden of heavy defense expenditures. No lasting peaceful compromise appears to be possible with the Politbureau as long as it adheres to its firmly established materialistic interpretation of history according to which the Soviet Union is charged with the fateful mission to liberate the world from the scourge of the capitalist order. The division of the world into two antagonistic camps corresponds to the dialectic construction of the evolutionary process. In the struggle against Soviet aggression the United States will have to be the military arsenal of the democratic countries; a large sector of her productive resources and manpower will have to be assigned to defense purposes. Hence it might be advisable to work out a system of economic cooperation among the member countries of the Atlantic Pact designed to open the markets of certain "dispensable" commodities to supplies from abroad. The domestic industries affected by the impact of increased foreign competition could be granted sufficient time for making the necessary adjustments, and the foreign producers could adjust their activities to the prospect of permanent markets. The standard of living of the American consumers would be improved through the supply of commodities from abroad; the proceeds from increased exports to the United States would ease the balance-of-payments positions of our Allies. Thus a lasting contribution could be made to the development, in the Western World, of a new pattern of international trading adapted to the task of improving the standard of living of the democratic nations and of protecting them from the aggressive operations of the Soviet Union.

COMMUNICATIONS

Toward a Theory of the Rational Economic Behavior of a Country in International Trade

In a recent article, Mr. Robert W. Stevens[1] undertakes "to investigate some recent contributions to the theory of international trade which . . . are based upon the central idea that the economic judgments of those in control of a country's international trade can be given formal theoretical expression, and . . . purport to provide us with a clear-cut graphical representation of the economizing activities of ruthless and short-sighted national states."[2] These contributions, which may be associated with the names of Kaldor,[3] and especially Scitovsky,[4] consist in the well-known rationalization of competitive tariff increases and their consequences, and, at least at the hands of Scitovsky, in a valuable reconsideration of the construction of community indifference curves,[5] and an application of the methodology to a discussion of barter agreements.

Mr. Stevens, however, after tracing the origin of the Kaldor-Scitovsky argument back to Marshall[6] and Edgeworth,[7] following its gestation through the contributions of Leontief[8] and Samuelson,[9] and summarizing its main line, with great emphasis upon its fundamental departures from classical international trade doctrine, takes the position that the methodology under

[1] R. W. Stevens, "New Ideas in the Theory of International Trade," *Am. Econ. Rev.*, Vol. XLI, No. 3 (June, 1951), pp. 369-88.

[2] *Ibid.*, p. 369.

[3] N. Kaldor, "A Note on Tariffs and the Terms of Trade," *Economica*, Vol. 7 (Nov., 1940), pp. 377-80.

[4] Tibor Scitovsky, "A Reconsideration of the Theory of Tariffs," *Rev. Econ. Stud.*, Vol. 9 (Summer, 1942), pp. 89-110; reprinted in the American Economic Association volume "Readings in the Theory of International Trade" (Philadelphia, Blakiston, 1949), pp. 358-388.

[5] Many writers remain sceptical about the validity of this part of Scitovsky's work. Thus Haberler states that "his solution of the problem is, however, not entirely satisfactory in my opinion" ("Some Problems in the Pure Theory of International Trade," *Econ. Jour.*, Vol. LX, No. 238 (June, 1950), p. 226, note 1). It is unfortunate that Professor Haberler should not have given the reasons why he finds this solution unsatisfactory. See also W. Baumol, "Community Indifference," *Rev. Econ. Stud.*, Vol. XIV, No. 35 (1946-47), pp. 44-48; I. M. D. Little, "Welfare and Tariffs," *Rev. Econ. Stud.*, Vol. XVI, No. 40 (1949-50); and W. Baumol, "The Community Indifference Map: A Construction," *Rev. Econ. Stud.*, Vol. XVII, No. 44 (1949-50), pp. 189-197.

[6] Alfred Marshall, *Money, Credit, and Commerce* (London, Macmillan, 1923), p. 157 *et seq.*

[7] Francis Y. Edgeworth, "Theory of International Values," *Econ. Jour.*, Vol. 4 (1894), pp. 35-50, 423-43, 608-38.

[8] W. Leontief, "The Use of Indifference Curves in the Analysis of Foreign Trade," *Quart. Jour. Econ.*, Vol. 47 (May, 1933), pp. 493-503.

[9] Paul A. Samuelson, "Welfare Economics and International Trade," *Am. Econ. Rev.*, Vol. 28 (June, 1938), pp. 261-66.

discussion must be completely rejected. Having carefully brought out the extent to which the argument depends upon "reliable community indifference curves,"[10] he states that "they must make it possible to arrive at policy decisions in the field of international trade, and this they cannot do."[10]

The purpose of this paper is to review and evaluate Mr. Stevens' position. His criticisms appear to be along lines with which I do not entirely agree, and I propose to offer a rehabilitation of the Kaldor-Scitovsky approach, and to indicate the direction in which their analysis may be fruitfully extended.

Mr. Stevens first objects to the use of community indifference curves on the ground that they may intersect, since the internal distribution of income will change when the deliberate government decision (a general increase in tariffs) is put into effect. He acknowledges Scitovsky's attempt to deal with this difficulty "by explicitly confining his attention to only two of many possible hypothetical income distributions—the ones prevailing before and after the contemplated tariff,"[11] but finds it unsatisfactory for two reasons: One is that "a decision is called for—whether or not to enact a tariff—and the basis upon which it must be made cannot be established until *after* the tariff has been passed and *allowed to have its effect upon income distribution so that a new family of indifference curves can be drawn* appropriate to the new distribution pattern."[11] This is a rather weak argument, for it makes no allowance for the possibility of estimating in advance the probable result of the contemplated decision. Were it necessary always to allow the effects of a decision to work themselves out before making it, no decision would ever be taken.

Moreover, as Scitovsky has pointed out, "the intersection of community indifference curves cannot reverse a statement based on the assumption that they do not intersect. That is, it cannot turn 'better' into 'worse' but only into 'no better',"[12] and "while it need not be worse, *in no case will free trade be better than protection* [from the point of view of a single country], short of the foreigners' reciprocal demand curve becoming infinitely elastic."[13] Therefore, should the estimate made in advance of the probable effect of raising tariffs upon internal income distribution turn out to be wrong, so that the relevant pre-tariff and post-tariff indifference curves intersect, the tariff increase would, at worst, leave the country in an equally satisfactory position, barring retaliation, the possibility of which Scitovsky argues will be neglected by each country acting independently of the others.[14] Clearly, the need to estimate in advance the probable effect of a tariff upon income distribution does not wreck the analysis.

The other reason why Mr. Stevens finds that Scitovsky's "attempt to rescue the methodology is unsatisfactory,"[15] seems to me equally weak. He relates

[10] Stevens, *op. cit.*, p. 385.

[11] *Ibid.*, p. 386. Italics in the original.

[12] *Op. cit.*, p. 379. This and all other references to Scitovsky's article are to the reprint in the AEA volume cited in note 4.

[13] *Ibid.*, p. 371. Italics in the original. However, see H. Denis, "A Note on the Theory of Tariffs," *Rev. Econ. Stud.*, Vol. XII, no. 32 (1944-45).

[14] More about this particular assumption later.

[15] Stevens, *op. cit.*, p. 386.

Scitovsky's "rescue attempt" to the latter's argument that, if the two relevant income distributions are "similar," it is unlikely that the relevant community indifference curves will intersect. He then gives his opinion that "they would become 'dissimilar' long before the spectacle of retaliation and counter-retaliation envisaged by Scitovsky could go very far,"[15] adding that, "as soon as enough dissimilarity occurs (and this crucial criterion of 'similarity' is probably not possible to define), the . . . indifference curves will intersect, suggesting not one optimum tariff but a whole range of optima."[15] But this argument takes no account of Scitovsky's statement that "the probability of community indifference curves intersecting . . . diminishes as the foreigners' offer curve, whose slope determines the position of the relevant points, rises less steeply."[16] From this it follows that this probability is greater, the more the elasticity of the foreigners' reciprocal demand curve exceeds unity.

If to this is added, as Scitovsky noted, that, as the successive steps of retaliation and counter-retaliation envisaged are carried out, trade diminishes and becomes gradually more and more confined to goods whose demand is less elastic, we then have a strong reason to suspect that the probability of the same country's indifference curves not intersecting increases with every step in the process.[17] When this is combined with Mr. Stevens' argument, one can only conclude that the two forces of increasing "dissimilarity" of income distribution and decreasing elasticity of the foreigners' reciprocal demand curve probably cancel each other out. To tip the scale, it may be necessary to consider, as Mr. Stevens suggests, whether the country contemplating tariff action is large and important or whether it is small and unimportant: a country of the former type would face a less elastic foreign reciprocal demand curve than one of the latter type.[18]

Mr. Stevens objects to the use of community indifference curves, not only on the ground that they may intersect, but also, if I understand him correctly, on the ground that they cover the international economic problems of the real world under theoretical premises "which must be both very numerous and extremely restrictive."[19] What appears to be meant here, I believe, is that the community indifference curves and the reciprocal demand curves which are derived from them cannot be drawn without assuming the answers which they are supposed to help us find. In support of his position, he quotes Haberler's well-known remark that "guessing the shape of these curves and then reading off the result means simply jumping to the final outcome of a complicated process without analysing it."[20] But I submit that this objection does not render the curves here under consideration completely useless, and it may be granted without thereby having to forego ever using them again.

Mr. Stevens objects that these curves cannot explain "a country's relative degree of monopoly in particular (potential, as well as actual) export markets,

[16] Scitovsky, *op. cit.*, p. 371.

[17] *Cf.*, Scitovsky, *op. cit.*, pp. 374-75.

[18] *Cf.*, Stevens, *op. cit.*, p. 381, note 28.

[19] *Ibid.*, p. 386.

[20] *Ibid.*, p. 387. The reference is to G. Haberler, *The Theory of International Trade* (London, William Hodge, 1936), p. 159.

of monopsony in particular (potential and actual) import markets,"[21] or clarify "the equivocal nature of various measures of changes in the terms of trade,"[21] or solve with absolute certainty "the vexing problem of deciding whether 'a country' is or is not 'better off' if it secures fewer imports on better terms, and the baffling problem of the effect of changes in income distribution upon community welfare."[21] But this may be admitted without greatly damaging the Kaldor-Scitovsky type of analysis: In the first place, these curves probably were never intended to deal with the first two questions. The question of the relative degree of monopoly and monopsony in *particular* markets seems especially ill suited to discussion by means of curves which might more properly be classified as tools of *aggregative* analysis, and the meaning of *various* measures of changes in the terms of trade can hardly be expected to be clarified with tools which obviously cannot rest upon more than just *one* such measure. In the second place, the lack of absolute certainty in the conclusions reached with respect to the last two questions mentioned by no means indicates that nothing at all can be said about them. Something can indeed be said, conditional though it may be, as the first two sections of Scitovsky's article amply demonstrate.[22] And in the third place, Scitovsky's use of these curves and Mr. Stevens' own interpretation of his analysis[23] indicate that the curves can help to rationalize the behavior of national states bent upon pursuing their own advantage in full exercise of their uninhibited sovereignty. That there are difficulties in the interpretation of community indifference curves does not completely invalidate this analysis. All it does is to qualify its results by "turning them from certain into probable statements."[24]

For all these reasons, I cannot agree with Mr. Stevens' condemnation of the Kaldor-Scitovsky argument. All that may be admitted, I believe, is that the conclusions reached with the methodology here in question must be stated in the conditional mode, as indeed is implied in the repeated warnings given by Scitovsky in his article. Mr. Stevens' comment that "it seems that those who use community indifference curves and Marshall's reciprocal demand curves have been led to formulate sweeping and positive conclusions which their underlying methodology cannot support,"[25] flies in the face of such warnings, and the Kaldor-Scitovsky argument emerges unscathed from the criticisms reviewed here.

[21] *Ibid.*, p. 387.

[22] His warning that "readers who feel uneasy about what has been said so far are well advised at this stage to forget about Sections I and II altogether" (Scitovsky, *op. cit.*, p. 368, quoted by Stevens, *op. cit.*, p. 386, note 39) appears to me more like an attempt to pacify his critics in advance than like an admission of lack of faith in the conclusions of sections I and II; for he goes on, in the remainder of the article, to assume that these conclusions were useful.

[23] *Cf.*, Stevens, *op. cit.*, pp. 378-84.

[24] *Cf.*, Scitovsky, *op. cit.*, p. 379. In the light of this statement, it is surprising that Mr. Stevens should state that "it is indicative of the confidence which they feel in their achievement of making comparable two economic concepts previously thought incomparable that the contemporary writers under review state their conclusions in the indicative mode, whereas the classical and neo-classical economists usually use the conditional when reaching conclusions in this field" (*op. cit.*, p. 385, note 36).

[25] *Cf.* Stevens, *op. cit.*, p. 387.

Actually it would seem as though the Kaldor-Scitovsky analysis could be extended further. In conclusion, I shall indicate briefly the direction in which such an extension appears possible, hoping, in another paper to carry it out in detail.

The key to the proposed extension is the analogy drawn by Scitovsky himself,[26] and noted by Stevens,[27] between what Stevens has aptly called a theory of active national tariff behavior and the theory of the firm. The series of moves and countermoves described by Scitovsky is said to take place under the assumption that "there is a large number of countries, and each trades with many of the others, [so that] any single country [is] justified in neglecting the danger of retaliation to its own tariff policy."[28] As Scitovsky points out, this is similar to the pattern of behavior of individual firms when there is a large number of them. However, if it is assumed that there is a small number of countries, or, better, that among the many countries a few are large and important enough to have a significant influence on the international scene, as appears realistic today with a few large countries accounting for the major share of world trade, the correct analogy would seem to be, not with the theory of the firm under competition, but with the theory of oligopoly.

Moreover, an analogy with the theory of the firm should embrace not only pure competition and oligopoly, but also the peculiarly Chamberlinian contributions to the theory of the firm, namely product differentiation and selling costs. In other words, it is not sufficient to argue that countries may, under certain conditions, deliberately alter their tariffs in an attempt to improve their national well-being, but in addition it is necessary to supplement this analysis of what is essentially a country's price policy with analyses of its "product" policy and of its "selling" policies. In general, the products exported from any country are not perfect substitutes for the domestic products of the importing countries, though, of course, many of them may be. This lack of perfect substitutability may arise because products are of different qualities, or because they bear labels showing their different origins, or because they are packaged and shipped differently, or because they are sold on different terms, or under different conditions of sale, or through different channels.[29] The existence of these differences between the products of the several countries opens up the possibility that a country will undertake to alter the products which make up the complex of its exports, to differentiate them further, in an attempt better to adapt them to the foreign demand. Moreover, knowledge of these differences being imperfect, it becomes possible for a country, through appropriate promotional activities, to undertake to develop the preferences of foreigners for its exports, in an attempt to expand sales abroad, or to undertake to develop the preferences of domestic consumers for its home-produced goods, in an attempt to resist inroads made at home by imported substitutes. Either a policy of

[26] *Cf.* Scitovsky, *op. cit.*, pp. 368-70 and pp. 375-76.

[27] *Cf.* Stevens, *op. cit.*, pp. 376-78, and again p. 380.

[28] *Cf.* Scitovsky, *op. cit.*, p. 375.

[29] These matters are discussed in detail in my doctoral dissertation entitled "The Theory of International Trade under Monopolistic Competition," on file in the Widener Library, Harvard University (1946).

"product" alteration or one of selling efforts, or both, may be adopted as deliberate national policies and given effect by direct government action or by governmentally encouraged private efforts, as illustrated in particular by the activities of the various British organizations concerned with the postwar "dollar drive."

When these possibilities are recognized, the analysis blossoms out into a full-grown theory of the rational behavior of the state in international trade. Such a theory must consist of three parts, dealing respectively with price policy, "product" policy, and "selling" policies. The Kaldor-Scitovsky argument, with such additions and qualifications as the analogy with the theory of oligopoly may suggest, belongs in the first part. So does what may be called the theory of competitive exchange depreciation which it would, of course, be possible to develop along the same lines.[30] Discussion of a country's "product" policy, in the second part, should include a consideration of the development of backward countries and its repercussions, as this is essentially a large-scale alteration of the "products" of the countries in question. Analysis of a country's "selling" policies, in the third part, should take up public promotional efforts of all kinds designed to influence the minds of men in the matter of their buying activities.

It is not necessary that such a theory be based upon "the concept of ruthless and short-sighted national states bent upon exploiting one another,"[31] as Stevens believes is the case with the Kaldor-Scitovsky argument, and it is possible to build the theory from the standpoint of the long-run interests of the country. Indeed, there is no reason why it could not explain "consultation and mutual economic aid," which, as Stevens argues, seems to be acquiring ever-increasing importance in the "free" world.

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[30] A theory of competitive exchange depreciation might even be said to have more validity than the theory of competitive tariff increases, in the sense, at least, that tariff rates are often set on a piecemeal basis, whereas the exchange rate is determined by one over-all decision, and is therefore more truthfully the object of rational policy making through deliberate action of the government than tariffs are.

[31] *Cf.* Stevens, *op. cit.*, p. 388.

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A Swedish Tax Provision for Stabilizing Business Investment

In the course of studying tax proposals designed to stabilize business investment, the authors found occasion to investigate a tax provision for this purpose which already exists in Sweden.

As was recently stressed in the United Nations report on "National and International Measures for Full Employment," a technique for stabilizing business investment is a valuable adjunct to other contracyclical policies. The United Nations committee, among other things, suggests that tax incentives might be devised for this purpose.

> Apart from monetary and credit measures, there may be at least two other ways in which the government can influence the rate of investment. One consists in influencing the timing of private investment projects through special tax incentives—the government offering special tax concessions or subsidies to firms which are willing to postpone or antedate their particular investment projects, so as to fit them into a more stable general pattern. . . . [This would] involve a highly complicated system of tax legislation and tax administration in order to devise and administer inducements that would exert a major influence on the timing of investment projects.[1]

Since virtually nothing has been published in English about the Swedish attempts to design such inducements, a communication on this matter may be of interest.

I. *Essential Provisions of the Swedish Law*

The main features of the Swedish provision, first enacted in 1938 and subsequently modified in 1947, are as follows:[2]

1. It provides an opportunity for corporations and economic associations to reduce corporate taxable income by a maximum of 20 per cent (or in the case of particularly profitable years, 35 per cent) if the amount deducted is put into one of four special investment funds, *investeringsfonder,* the use of which is subject to government approval.

2. The use to which these funds should eventually be put when business conditions need stimulus was described by a Swedish committee of experts surveying this tax provision in 1945. They stated that the investment funds

> ought to be disposable only for investment projects, useful in themselves, which the entrepreneur without great inconvenience can undertake at a time when measures to support the level of business activity are desirable. From this point of view construction should get a first priority. Construction projects might provide employment directly as well as indirectly.[3]

In addition to construction, there are three other purposes for which funds may be established. All funds have to be earmarked either for construction, for financing inventory accumulation, for purchase of machinery or equipment, or for defraying the cost of exploration and research projects in the mining industry.

The disposal of the funds in the meantime, *i.e.*, before they are put to use,

[1] United Nations, *National and International Measures for Full Employment* (New York, 1949), p. 34.

[2] Our source material consisted of: The Swedish Royal Ordinance of June 17, 1938, concerning investment funds (SFS 384/1938); Royal Ordinance of May 2, 1947 (SFS 174/1947); *Survey of the Most Important Regulations Concerning Investment Funds* (mimeographed memorandum in Swedish, published by the Royal Labor Commission, 1950); and a summary prepared by Sveriges Industriförbund entitled "The Possibilities for Swedish Industrial Enterprises to Have Tax-Free Reserves for Future Requirements," obtained through the kind cooperation of Mr. Gerald Colm. Valuable information was also obtained through correspondence with Mr. Arne Henriksson of Landsorganisationen (the Swedish Confederation of Labor).

[3] Royal Labor Commission, *op. cit.*

is left to the firm's discretion. The money is not paid in to the government, nor does it have to be put into government bonds. These "funds" consequently do not have any earmarked, more or less liquid, counterparts: they are simply cumulated deductions from taxable income, making up "reserves" or "accounts" of a bookkeeping nature.

3. Firms that wish to take advantage of this tax deduction are urged to make definite plans, so far as possible, for the use of the funds if or when a time comes when employment opportunities are lacking. The 1945 report said:

> When the authorities are informed that a fund has been established, the investment project should be planned and prepared, if this has not already been done, so that it can be put into operation as soon as conditions require it. This planning should obviously be done by the company but a certain cooperation and consultation with the authorities ought to take place.[4]

4. The eventual disposal of the funds for stimulating purposes is partly under the control of the government, which can specify the year or years when the funds should be used (on a permissive or mandatory basis). The government through the Labor Commission, which is the administrative agency supervising the *investeringsfonder,* may also specify which of the four funds, categorized by purpose, are to be released, and whether all or only specific firms or industries may utilize their funds. Furthermore, the Labor Commission may in special cases permit funds set aside for one purpose to be used for another. In short, the government has a wide latitude in determining when, where and how the funds should be used.

5. The tax exemption on these funds is ultimately realized only if the funds are used with the approval of the government. If a firm decides to cash any part of its funds without government approval, the total amount withdrawn is subject to taxation at the rate current during the year in which the fund is used, and the taxable value of the withdrawn portion of the fund is increased by a 3 per cent interest compounded from the year in which the funds were set aside. If the government decrees that during a certain period the use of the funds is compulsory, and a firm does not spend the money as directed, any part of the fund not properly used plus a 3 per cent compounded increment becomes subject to taxation at the current rate.

6. Similarly, funds which have not been released by the government are liable for taxation after ten years (or a maximum of 15 years if extended by the government). In this case the taxable value of the funds is compounded at 2 per cent.

7. If a firm uses its funds, with the approval of the government, to procure plant or equipment, it is *not* permitted to charge depreciation on these assets for purposes of reducing its taxable income in that year or in subsequent years. If a firm supplements its *investeringsfonder* with funds from other sources, it can carry the asset on its balance sheet at the value represented by the amount of the funds it supplied. The asset, thus valued, is subject to normal depreciation. At the time of investment the portion of the asset that comes from the

[4] Royal Labor Commission, *op. cit.*

investeringsfonder is thus written off for accounting purposes but the "loss" is not allowed for income tax purposes.

It should be pointed out that business firms in Sweden are permitted wide discretion in charging depreciation for tax purposes. Machinery and other equipment may be written off completely in one year, and inventory may be written down to 30 per cent of its value in the year of purchase; in the case of buildings, however, a depreciation programme (for tax purposes) chosen at the time of investment must be abided by in future years until the building has been completely written off.

II. *Comments*

The Swedish provision for investment funds was only introduced on the eve of Warld War II; it has not yet been put to a test in a business downturn. But even in the absence of such experience, the scheme gives rise to certain questions concerning the general problem of stabilizing business investment through tax redemption measures.

1. The first and most important question is whether this arrangement actually will change business investment patterns over the cycle. What incentives does the scheme offer to make businessmen stabilize their investments? It should be noted that over the long run, from the profit and loss viewpoint, there is no significant tax reduction offered under the Swedish provision, since investments financed from the funds are not subject to such subsequent depreciation as would otherwise have been allowed. The investment funds simply offer the alternative of a pre-expenditure rather than a post-expenditure deduction, with the difference, however, that the firm has somewhat greater freedom in timing pre-expenditure than post-expenditure deductions, particularly in the case of plant. The provision consequently serves, in some ways, the functions of the carry-forward and carry-back provisions of American tax laws; such provisions do not exist in Sweden. The resemblance to carry-forward and carry-back provisions is not complete, however, since the Swedish funds set aside in prosperous and spent in depressed years are augmented by the contributions from the firm in addition to the taxes which are shifted. Furthermore, under a carry-forward and carry-back provision there is no incentive for a firm receiving a tax rebate to use this money in ways which stimulate the economy, which is the essence of the Swedish provision.

There is an incentive in the form of an interest advantage, since the taxes temporarily waived by the government and invested by the firms are in the nature of an interest-free loan if the funds are subsequently used with the approval of the government. Even if they are not so used, the investment funds may be profitable since it is likely that they can be invested at a higher rate of return than the rate imputed by the government when taxes are ultimately levied (2 or 3 per cent respectively).

Under the Swedish scheme, deferred taxes are levied at the current tax rate in the event the firm uses the funds without government approval or has no opportunity to use them with such approval within the ten (or fifteen)-year time limit. This would appear to inject an element of uncertainty, the effects of which would most likely be discouraging. If tax rates are anticipated to fluctuate with the cycle, this would, it is true, be an incentive, but given the

past trend of increasing tax rates, businessmen would probably be pessimistic about the wisdom of substituting future for present rates.

Other factors that may discourage the use of this provision by Swedish firms would seem to include the administrative red tape inevitably accompanying a measure of this type, and the disinclination of businessmen to anticipate a depression—an attitude which may have been accentuated by many years of prolonged prosperity. On the other hand, they would seem to have much to gain and little or nothing to lose by taking advantage of it. Deviations from government instructions with regard to use and/or timing of the funds are, in effect, not penalized. The tax liability incurred in case of violation is immediately offset by the possibility of writing off the asset created by the use of the funds if these are used to purchase inventory or equipment; in other words, the cancellation of the pre-expenditure deduction is immediately offset by the creation of an equal post-expenditure deduction when the funds are invested. In the meantime the firm has had the use of the larger funds at low interest, as indicated above. It would therefore seem that firms have every incentive to utilize the provision but little or no compelling incentive to comply with the government in the disposal of the funds.

It is difficult to evaluate the effectiveness of the above incentives and disincentives from data available concerning the size of Swedish investment funds, since no comparable data on corporate profits are at hand. At the end of 1950 (the latest year for which we have information), the funds totalled 214 million kronor, of which 80 per cent was in the category to be spent on plant. Only 33 million kronor were earmarked for equipment, 8 million for inventory, and 2 million for mining development. The emphasis on construction purposes is partly explained by the fact that other investments are subject to immediate depreciation and therefore carry with them their own tax reduction possibilities without resort to the provisions for investment funds.

If there is no substantial increase of the funds in coming years, their importance to cyclical policy would in all likelihood not be very great: compared to the value of the Swedish gross national product in 1950 they amounted to approximately 0.7 per cent. Today this would be comparable to a fund of $2-2.5 billion in the United States.

The question raised by this survey so far is whether incentives such as those offered in the Swedish provisions are really sufficient to bring about the desired change in the business spending pattern. Certainly if actual long-run tax deductions were offered, this would provide a stronger incentive for business firms to use the provisions according to government plans. This could be accomplished by not eliminating depreciation privileges on the assets financed by the funds.

2. Another question which comes to mind in considering the Swedish provision is whether it is advisable to restrict the use of the funds to specific purposes such as here the financing of construction, equipment, inventory, or mining projects. In the first place, various other spending outlets of similar priming effect may be imagined; moreover, the usefulness of a separation between the purposes mentioned is not immediately clear. An artificial rechanneling of business intentions may result in uneconomic use of resources. True, since no real penalty appears to attach to action taken without government

approval, this may be corrected by failure to comply, but then, why attempt such restriction in the first place?

Furthermore, there is real doubt that any apparent *ex post* matching of withdrawals from the funds and specific outlays is justified. It is possible that funds might be used for expenditures which would in any case have been undertaken, thereby simply increasing the idle balances of the firm, although ostensibly resulting in stimulating expenditure. The net stimulating effect could not be negative, but it might be considerably enhanced by making the benefits under the scheme contingent on the *increase* in spending rather than on the specific *purpose*. To demonstrate such an increase is patently difficult since there is no way of telling what the firm would have spent without the funds. However, an operational rule surmounting this difficulty might be to assume that any decrease in the funds not matched by an increase in liquid balances is *prima facie* evidence that there has been an incremental expenditure.

3. Finally, should the provision have a time limit for the use of the funds or should the balances be allowed to accumulate for as long as prosperous conditions exist, even though that be twenty or twenty-five years? Certainly a larger counter-depression fund would accumulate in twenty years than in ten, and to the extent that this device has stabilizing powers, the larger the fund, the better. Also, might it be wiser to provide for the timing of the funds' use on an automatic basis—linked perhaps to the percentage of unemployment—than to allow it to be at the discretion of the government. Administratively, an automatic stabilizing program may be simpler than a discretionary one, although the loss of flexibility and judgment in policy-making may outweigh the administrative gains.

Regardless of the above questions, it seems clear that the Swedish tax laws merit the attention of students of tax programs. It would seem, furthermore, that with certain modifications, the program could be so devised as to be even more effective as a stabilizing device without making it any more cumbersome administratively. In any event, if a similar program is to be adopted in the United States, the time to begin planning and establishing the funds is during periods of full employment such as the country is now experiencing, not when the depression has already begun.[5]

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Goran Ohlin*

[5] A proposal for a revision of the U.S. tax laws to allow a scheme very similar to the Swedish program was suggested in an article by Gustave Simons, "New Techniques for Capital Formation in a Free Enterprise System," *The Conference Board Business Record*, May, 1950.

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Professor Markham on Price Leadership: Some Unanswered Questions

Professor Markham's article on price leadership in a recent issue of this *Review*[1] invites comment particularly because its conclusions have direct implications of public policy. These comments will deal primarily with points

[1] Jesse W. Markham, "The Nature and Significance of Price Leadership," *Am. Econ. Rev.*, Vol. XLI, No. 5 (Dec., 1951), pp. 891-905.

related to public policy, although Markham also discusses other matters. His major conclusions are: (1) Price leadership can be really effective only under "extraordinary conditions" (p. 905), and he lists five market features prerequisite to effective price leadership; (2) ". . . it proved to be an exploitative weapon of limited effectiveness in the cigarette industry . . ." and then was useful only for a few years (p. 904) even though one could hardly have hoped to find circumstances more conducive to effective price leadership than existed in the cigarette industry (p. 903); (3) "Barometric" price leadership does ". . . little more than set prices that would eventually be set by forces of competition" (p. 899); (4) Only when implemented by such devices as basing point systems or in association with more insidious pricing devices and trade restraints is price leadership effective (p. 905).

The following questions suggest some points where Professor Markham's case could stand strengthening. Perhaps most important, how would prices behave in markets having price leaders, whether barometric or some other type, if there were no price leadership? To conclude that the barometric type of price leadership leads to the same consequences as "competition," Markham must explain how prices would behave in leadership markets in the absence of price leadership—a matter nowhere discussed in his article. He might also explore why firms adhere to this market practice if it does not alter the outcome. It seems that Markham has either defined barometric price leadership so that it is synonymous with "competition" or he regards *any* departure from a collusive or cooperative arrangement as a condition of "competition."

The foregoing points raise the basic question, when is price leadership effective? Will any deviation from a leader's price make price leadership ineffective? Is price leadership ineffective, as Markham implies, whenever it fails to achieve ". . . the rationalized oligopoly (or monopoly) market solution" (p. 904)? Probably very few collusive market arrangements receive compliance by all members of a trade. Yet despite some non-compliance, these devices almost certainly alter such things as average price, productive capacity, expenditures on sales promotion, and average profits. This last conclusion cannot be "proved" conclusively, of course. Considerable weight should be given to the fact that most businessmen are completely convinced that such market practices alter business conditions; otherwise, they would not strive to prevent completely independent price behavior, even though they "know there is sure to be at least one chiseler in the trade." Are not cogent reasons required to support the conclusion that a change in price behavior by almost every seller in an industry from complete independence to the following of a leader will not affect market results significantly?

Markets seem to have an episodic history, composed of disjointed but interrelated phases. Perhaps price leadership in which not all firms participate would ultimately result in "competitive" price if market conditions remained stationary. However, isolated deviationists need not wreck leadership arrangements before, say, weak markets become firm, or a major merger is carried out, or the market strategy of individual sellers change, or a strong collusive arrangement is created, or the government intervenes to assist the industry. Given market episodes of brief duration, perhaps the actions of the

great majority cannot be undermined by the activities of isolated independent souls. Moreover, all of the dissimilar periods that go to make up the market history of most industries must be taken into account in assessing the *total* consequences of a market practice. Even attempted price leadership that finally breaks down could profoundly affect both the structure and behavior patterns of an industry. If it does not, that fact must be explained. Incomplete price leadership is not *obviously* equal to "competition" or utterly lacking in effect.

Must we not consider any market device effective if it alters perceptibly the performance of an industry? By this standard, are not both price leadership where an occasional firm deviates from the leader's price and barometric price leadership sufficiently different from independent price behavior to create the presumption that their effects are also perceptibly different?

The definition of effective price leadership is also implicit in the five market features that Markham asserts to be prerequisite to effective price leadership. The conditions he lists are: fewness of sellers; severely restricted entry to the industry; rivals who sell products that they regard as "extremely close substitutes"; an elasticity of demand that must not greatly exceed unity for the output of the industry as a whole; and fairly similar individual firm cost curves. In fairness to Markham, it should be noted that he takes less than a page and a half to explain why he believes these conditions "prerequisite to effective price leadership . . ." (p. 901). The conditions he lists might better be considered factors conducive to price leadership; several simply determine the amount of profit to be gotten from price leadership; only one can be considered prerequisite—*i.e.,* oligopoly.

Markham seems to have omitted perhaps the most vital requirement for effective price leadership—the willingness of sellers to freeze existing market shares except as they would be changed by non-price competition and the entry of new firms. Price leadership would not be successful for very long no matter what the cost, demand, and entry conditions if several sellers—they could even be rather small—were determined to enlarge greatly their share of the market by aggressive price and non-price policies.[2]

Several of Markham's prerequisites for effective price leadership do not seem to be absolutely necessary. Price leadership is altogether consistent with the entry of new firms, though new firms limit the gains to firms that are party to such an arrangement. (Price might be the same whether or not new firms enter; however their advent would lower total net profits in the industry.) Has it been demonstrated, as Markham asserts, that ". . . new entrants . . . will bid the price down . . ." in oligopolistic markets (p. 901)?

To take another of Markham's prerequisites for effective price leadership, it clearly would help to have each producer view his output as an extremely close substitute for the output of rivals. His examples, however, suggest that he exaggerates the need for product similarity. He lists automobiles and

[2] One should distinguish between firms that will not "go along" with a price leadership arrangement by giving secret price discounts and firms that aggressively push a policy of charging prices below those asked by the leader.

brand-name men's clothing as products not sufficiently similar to sustain price leadership. One could argue that an effective, though complicated, form of price leadership has prevailed at times in the low-price car market.[3] One must not expect all prices to be identical, or to differ by unvarying amounts under price leadership.

An elasticity of market demand not greatly above unity also seems an unnecessary condition for effective price leadership. Even when demand is elastic, well above unity, price cuts followed by rivals can be mutually disadvantageous, and price increases by all sellers would be correspondingly advantageous. Elasticity of demand well over unity does not rob monopoly of all value, and similarly it does not eliminate all incentive for or possibility of effective price leadership. Markham's main point is that near-substitutes set an upper limit beyond which price leadership cannot carry price. This contention is correct but rather sterile. Effective price leadership could raise price to the point where near substitutes prevented further price increases; without it, prices could be far lower.

Markham's last requirement that individual firm cost curves should be similar, seems unnecessary analytically and also inconsistent with one of the most notorious cases of price leadership. He argues that "Low-cost firms will not accept the price leadership of high-cost firms since there is a better option in the form of a lower price and a higher rate of output open to them" (p. 902). The leadership of the United States Steel Corporation over a considerable period during which time it was conspicuously less efficient than its rivals raises doubts about this assertion.[4] Moreover, one should not conclude on logical grounds that low-cost producers will gain more from a lower price than from a higher one if all members of the industry charge the same price. In the absence of special arguments not mentioned by Markham, it seems quite as reasonable a general rule that all firms, including low-cost producers, gain from the elimination of independent price behavior.

Markham asserts that some concrete basis of implementation is required for price leadership to be effective. This conclusion is not obvious and should be supported. If some device like the basing point system were employed, would not sellers depart from the system under the same circumstances under which they would refuse to follow the leader? If not, why does Markham believe the difference between them to be so great? While I would agree that the particular market practices employed by sellers influence the operations of a market, Markham has not shown that basing point systems would always injure the public interest more than simple price leadership in similar market situations.

[3] I have heard this position argued. The facts seem explainable by cost-plus pricing as well as by price leadership. In his factual illustrations, Markham slides over the almost insurmountable difficulties of detecting price leadership in concrete cases.

[4] For evidence of price leadership in the steel industry, see A. R. Burns, *Decline of Competition* (New York, McGraw-Hill, 1936), pp. 77-93. For evidence that U.S. Steel was a high-cost producer, see statement by G. Stocking before the Celler Committee, *Hearings before the Subcommittee on Monopoly Power* of the House Committee on the Judiciary, 81st Cong., 2nd Sess., Ser. No. 14, Part 4A, p. 967.

Markham's total argument turns price leadership into either an ineffectual or exotic market practice. His conclusions are sanguine: barometric price leadership gives the same results as competition; price leadership has limited effectiveness even under the most propitious conditions and can be effective only under extraordinary conditions. And if perchance a dominant firm is an effective leader, one need only wait a little while and new firms will emerge to end its dominance (p. 896). Perhaps one should ask whether very different conclusions are not at least equally correct?

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Welfare Considerations in Economics: A Reply

Dr. Enke's review of my *Social Economy and the Price System,* in the September (1951) number of the *American Economic Review,* raises issues concerning the scope of economics, the problem of inequality, and the rôle of the state, that warrant some brief comments.

1. The first of these issues is raised by his statement that my book "can hardly be intended for professional economists, for it does not contribute to value theory, income theory, or distribution theory." The central problem of the book is to study the potentialities and limitations of a normative price system as a mechanism for guiding the economic process toward goals of social economy. This involves the application of the theories mentioned to the problems of economic welfare. It is just such applications that constitute the ultimate end and justification for the study of economics, and they have rightly engaged the attention of professional economists from the very beginning. Recent efforts to construct a body of welfare economics on strictly scientific principles leave too much of the welfare out. It is time to shift the emphasis; not so much in the tradition of Pigou as in that of Hobson, Tawney, Cannan, and others.

2. The problem of inequality, again, is one about which many able economists and philosophers have expressed concern. An effort to deal with it dispassionately, in carefully reasoned terms, can hardly be dismissed as "envy of the well-to-do."

3. All intelligent discussion of the rôle of the state as an agency for promoting economic welfare is precluded if proposals for useful action by the state are to be prejudged at the outset as "politically naive." It can be conceded that the state (like all human institutions) is an imperfect agency. But socio-economic problems are mostly collective problems that we can cope with only by collective action.

RAYMOND T. BYE

Monetary Policy to Combat Inflation

Editor's note—In the December, 1949 issue of this *Review,* there was published a statement, "Federal Expenditure and Revenue Policy for Economic Stability," signed by a group of prominent economists. The statement was prepared at a conference sponsored by the National Planning Association and was transmitted to the Joint Committee on the Economic Report. The present statement, also sponsored by the National Planning Asso-

ciation, was prepared at a conference at Princeton, N.J., October 12-14, 1951. The signers were James W. Angell, George L. Bach, Howard R. Bowen, Lester V. Chandler, Howard S. Ellis, Milton Friedman, Albert G. Hart, Charles J. Hitch, Simeon E. Leland, Roland I. Robinson, Paul A. Samuelson, Lawrence H. Seltzer, H. Christian Sonne, Herbert Stein, Henry H. Villard, Donald H. Wallace, and Charles R. Whittlesey.

Other participants in the conference who did not sign were E. A. Goldenweiser, A. H. Hansen, R. A. Musgrave and Jacob Viner. The statement has been printed in a Joint Committee Print, *Monetary Policy and the Management of the Public Debt*, Part 2. In view of its great interest to economists it is reprinted below with complete footnotes.

The program for strengthening America's defenses creates a serious danger of inflation which may be with us intermittently or continuously for some years. It is essential that we deal with this inflation problem more effectively than in recent years and in ways that will promote healthy growth of the economy. This will require a coordinated program of general financial measures adequate to prevent a significant excess of the total monetary demand for goods and services over the total supply, at stable prices. Such a program should include:

Adequate taxation
Economy in government expenditures
Effective control of credit
Proper handling of the government debt
Encouragement of private savings

In addition, there is general agreement among the members of this conference that the government should have power to allocate scarce materials. Most of us also believe that under some circumstances the prevention of inflation requires certain direct controls over wages and prices—either selective or comprehensive; a few of us believe that such controls are unnecessary. We all agree, however, that price and wage controls are, at best, a necessary evil and that a program to prevent inflation, whatever direct controls it may contain, will succeed only if it includes fiscal and monetary measures adequate to eliminate excess monetary demand.

Excess monetary demand can be reduced by taxation that reduces spending power; it can also be reduced by monetary measures that increase the cost or reduce the availability of credit and limit the supply of money. The more we tax, the less we need to rely on stringent monetary policy; the more stringent our monetary policy, the less taxation will be needed to prevent inflation. For example, a government surplus with an easy money policy or a government deficit with a tight money policy might each have the same effect on total inflationary pressure.

While inflation is not the only situation with which monetary policy may have to deal, the present statement deals neither with problems of deflation nor with those of all-out war, but concentrates on the use of monetary policy to meet an inflationary situation during the present defense period. Without implying that the present tax structure is adequate nor that still higher tax rates may not be required, our basic conclusion is that monetary policy should play a more active role in limiting inflation than it has played in the recent past.

Recommendations

The amount that individuals and businesses desire to spend is powerfully influenced both by the volume of credit that is available to them and by the volume of money and other liquid assets they already possess. Monetary policy covers the whole range of measures affecting these influences on spending, and the following recommendations are directed to monetary policy in this broad sense.

Recommendation I

The central contribution that monetary policy can make to the control of inflation is to control the reserve position of the banking system so as to restrict the supply of credit. The main specific technique for restricting the volume of bank reserves is the sale by the Federal Reserve authorities of securities in the open market, re-enforced by a rediscount policy that limits bank borrowing. The reserve position of banks can also be tightened by an increase in reserve requirements, but restrictive monetary policy need not wait for the new legislation this method would require.

In our judgment, the failure to utilize existing monetary powers adequately in the period since the war must bear a significant share of the responsibility for the inflation that we have experienced. In reaching this judgment, we have considered the repercussions of the exercise of such power on the economy in general and on the bond market in particular. It is our judgment that fuller use of existing Federal Reserve powers can make a major contribution to restraining inflationary pressures.

Recommendation II

Fuller use of existing Federal Reserve powers to counter inflationary pressures might on some occasions result in substantial declines in the prices of government securities or substantial rises in their yields. This result would not in itself justify giving up a policy of monetary restriction that is required for economic stabilization. It may, however, call for action from time to time to keep declines in security prices orderly. But we do not believe that Federal Reserve purchases of government securities to maintain orderly conditions need involve any net purchases over a significant period of time that would not have been required by general economic stabilization.

In addition, it may be desirable to temper the use of monetary restriction if circumstances arise in which the contribution of further restriction to economic stability would be too small to compensate for possibly undesirable consequences of the decline in the prices of government securities or the rise in their yields. Among such possibly undesirable consequences are capital losses for banks and other financial institutions; redistribution of income associated with a rise in interest payments; discouragement of saving as a result of fluctuations in government security prices; effects on the terms on which investors will purchase government and other securities; and changes in the willingness of business enterprises dependent on the security markets to make real investments.

It is difficult to predict in advance the extent to which monetary restriction will contribute to the prevention of inflation in any particular situation, or whether any accompanying decline in government security prices or rise in yields will produce seriously undesirable consequences. Hence, the policy of monetary restriction described in Recommendation I must be subject to continuous reappraisal.

Recommendation III

The impact of restrictive monetary policy on the prices and yields of government securities can be moderated by a number of devices. While we have not studied such devices in detail, we believe that the following are sufficiently promising to justify serious examination with a view to possible adoption: (a) the imposition of reserve requirements by classes of bank assets instead of, or in addition to, present requirements against bank deposits, the level of requirements to be lower on government securities than on other assets; (b) the establishment of limits on the aggregate amount of loans and investments other than government securities that may be held by individual banks, the limits to be determined by objective and non-discriminatory rules such as reference to a base date, with provision for transfers of quotas among banks and for reasonable classification and adjustments to care for defense needs and remove inequities; (c) the imposition of requirements that banks hold secondary reserves in the form of government securities equal to a specified fraction of their assets or their deposits. If one or more of these devices were found suitable for adoption, the power to use it should be given to the Federal Reserve authorities. But consideration of these devices or of other measures included in subsequent recommendations should not be made an excuse or occasion for delay in the appropriate use of existing powers.

Recommendation IV

The existing powers of the Federal Reserve authorities over the reserve position of banks should be strengthened by additional legislation (a) giving the Federal Reserve power to increase cash reserve requirements against deposits above the present maximum level and to impose a special reserve requirement against increases in deposits of individual banks after a stipulated date, with provision for reasonable classification and adjustment to care for defense needs and to remove inequities; and (b) making the reserve requirement for banks which are not members of the Federal Reserve System correspond to those of comparable member banks. These additional powers are desirable to improve the long-run effectiveness of the Federal Reserve System, but their absence should not excuse delay in the use of existing powers.

Recommendation V

We make no attempt to offer detailed proposals on the specific types of securities to be issued by the Treasury. We do, however, recommend that a substantial part of the debt be in the form of securities which contain strong incentives for investors to hold them to maturity. As far as possible, the bal-

ance of the debt should be in the form of securities that will not give rise to frequent or persistent pressure for Federal Reserve support.

Recommendation VI

In a defense period, selective credit controls (such as those applying to consumer credit and housing credit) can assist in the diversion of particular resources from less essential activities to defense-related uses. These controls will also reduce somewhat the extent to which general monetary restrictions need be applied.

Recommendation VII

We endorse the following statement, made in January, 1950, by the Douglas Subcommittee on Monetary, Credit, and Fiscal Policies:

> . . . the restoration of free convertibility of our money into gold would be neither a reliable nor an effective guard against serious inflation. . . . There is no reason to believe that a requirement of redeemability into gold would promote wise monetary and credit policies; in fact, past experience indicates that it would at times endanger such policies. . . .[1]

Recommendation VIII

Increased saving can make a significant contribution to the restraint of inflationary pressures. Study should be given to the issuance of new types of securities that may encourage saving, such as bonds of constant purchasing power (which might be particularly appropriate for purchase by Social Security and pension funds), annuities in excess of those provided under the present Social Security program, and savings bonds offering strong inducements for retention to maturity by the original purchaser.

Recommendation IX

The policies of government lending and loan-guaranteeing agencies should be made consistent with other fiscal and monetary policies. These agencies exert a significant influence on the cost and availability of credit for major sectors of the economy, and their actions have frequently run counter to the needs of general economic stabilization. In making these recommendations, we are, of course, aware that other aspects of national policy besides general stabilization must be considered.

Recommendation X

Full and effective utilization of monetary powers requires coordination of the policies of the various government agencies whose actions affect the volume and availability of credit—especially the Treasury Department and the Federal Reserve System. We recommend, therefore, that steps be taken immediately to establish an effective coordinating mechanism to ensure that all agencies concerned with monetary problems follow consistent and mutually supporting economic policies.

[1] *Monetary, Credit, and Fiscal Policies*, Report of the Subcommittee on Monetary, Credit, and Fiscal Policies of the Joint Committee on the Economic Report, 81st Congress, 2nd session, Document 129, p. 43.

Footnotes by Signers

To the Statement as a Whole

Paul A. Samuelson and Charles R. Whittlesey

This statement points in the right direction but exaggerates the potency of monetary policy relative to fiscal policy, selective credit policies, and other more direct controls. We also believe that many of the policies mentioned should have further discussion, analysis, and observation before being applied even experimentally.

To Recommendation I

Lawrence H. Seltzer

This recommendation contemplates action more violent than I consider necessary or advisable in the present circumstances. Barring a marked increase in the turnover of money, it is only necessary to limit further additions to member bank reserves to the amounts the economy can use without inflation, not to reduce them nor to increase cash reserve requirements. Among the evils from which we have not suffered during the past few years are unemployment, low profits, falling prices, and a stagnant or declining level of output. Inflation is not necessary to avoid these evils, but violent deflation is pretty sure to produce them. Let us by all means strive to keep the expansion of credit within limits that avoid inflation, but let us also avoid violent deflation.

To Recommendation II

Milton Friedman and Roland I. Robinson

We do not concur in Recommendation II. "Orderly markets" has become a semantic cloak hiding the desire to resist all price declines. Moreover, the consequences of monetary action listed as "possibly undesirable" are mostly trivial, imaginary, or—where real—not undesirable.

If truly undesirable consequences should develop, the appropriate remedy would be higher taxes, which would make a lower level of interest rates consistent with avoiding inflation.

To Recommendation III

Milton Friedman

I dissent from this recommendation because the devices listed would reduce the efficiency of our private credit system by altering, in essentially arbitrary ways, relative yields on various classes of private loans and securities. I see no counterbalancing advantage.

Charles J. Hitch

I must oppose as unnecessary, administratively undesirable, and inconsistent with the efficient operation of a free enterprise economy proposals like Recommendation III (b) which involve quota restrictions on the lending activities of individual banks.

To Recommendation IV

George L. Bach and Milton Friedman

These powers are unnecessary. The Federal Reserve already has ample power to control the volume of money through open-market operations; its unwillingness to use existing powers will not be solved by giving it still more power.

Milton Friedman

These powers are also undesirable—the first, because it is less flexible than open-market operations, the second, because its impact depends on the accidental position of the banks on the base date.

Herbert Stein

The proposed measures should receive further examination and be adopted only if thorough study indicates their desirability.

To Recommendation V

Roland I. Robinson

If the last sentence of this recommendation is interpreted as adverse to the use of long-term marketable Treasury securities, I demur.

To Recommendation VI

Milton Friedman

I disapprove of selective credit controls. Such controls, like other "direct" controls, are an inequitable and inefficient means of altering resource allocation. The "interest rate," despite admitted deficiencies, will do a far better job.

To Recommendation X

Lester V. Chandler

While agreeing that better methods of integrating monetary, credit, and fiscal policies are desirable, I disapprove of this proposed method and feel that its full implications have not been adequately considered.

Roland I. Robinson

In a democracy profound disagreement on policy is to be expected. I do not believe that recent policy disputes have created such a lack of reasonable cooperation at the operating level as to require administrative reorganization.

FOOTNOTES BY OTHER ECONOMISTS ATTENDING THE MEETING

The economists whose footnotes appear below attended the conference, but did not sign the statement:

E. A. Goldenweiser

While I agree that vigorous monetary action is essential in an inflationary period, the statement includes so many propitiatory qualifications that the

general position loses much of its force. Also there are many matters of detail and emphasis on which I differ. Consequently I am unable to sign.

Alvin H. Hansen

The statement implies that monetary policy is more potent than it actually is. In particular, the third paragraph is far too sweeping in alleging perfect substitutability of monetary for fiscal policy to control inflation. We face inflationary pressures which cannot be controlled by monetary policy unaccompanied by tax increases except at the cost of serious repercussions on production.

Vigorous monetary policy should be undertaken only if its impact on government security prices is moderated by some of the devices advocated in Recommendation III. Hence, I disagree with the conclusion which places much responsibility for recent inflation on the monetary authorities. Expectations caused by Korea were bound to result in price increases; their prevention by monetary action alone would certainly have injured the economy.

Richard Musgrave

Space does not permit me to state the qualifications, on a few major and several minor points, which would enable me to sign. I agree entirely that effective stabilization requires a supporting monetary policy, but I believe that the extent to which the Federal Reserve can or should apply general credit restriction (and the extent to which the disadvantages mentioned in the statement may be avoided) depends greatly on whether measures such as those listed in Recommendations III and V are taken. Also, selective controls, rather than help "somewhat," can do an important part of the job, thus reducing the range of necessary interference with Treasury operations. Finally, the issue is not whether *some* degree of credit restriction can check inflation (it obviously can), but *what* degree of restriction and rise in interest is now needed. Since we know little about this, or the magnitude of adverse effects, the whole is a matter of judgment. Considering the stakes, it is all important that activation of monetary policy be framed so as to minimize the risks involved.

Jacob Viner

I am in agreement with the statement insofar as it stresses the importance of increased use of monetary policy to combat inflation. My unwillingness to sign it is due to my belief that the support here given to vigorous use of monetary policy is too weak and excessively qualified.

BOOK REVIEWS

Economic Theory; General Economics

The Life of John Maynard Keynes. By Roy F. Harrod. (New York: Harcourt-Brace. London: Macmillan. 1951. Pp. xvi, 674. $7.50.)

It would be pure supererogation for me to stress here the broad general appeal which all reviewers have recognized in this truly fascinating book. This reviewer did not know Keynes personally and therefore cannot say whether the portrait of Keynes, the man, is wholly accurate. But that it is always vivid can be attested by any reader. Some criticism has been made of the style as occasionally awkward and self-conscious, but much the same criticisms can be made of Boswell's "Johnson." This book is *alive,* and I think it will be alive long after we are all dead. Mr. Harrod carries the reader straight through Keynes' life in chronological order. Popular readers will undoubtedly find the first part the most interesting. But whether we are reading of Keynes' boyhood at Eton, or of his Bloomsbury friends, or of his later government work, the interest is always sustained. Economics, history, philosophy, literature, and (almost) gossip are all piled together. I do not recall ever reading anything that entertained me more.

Since it is impossible to cover such an array of material in a short review, I propose to concentrate here upon Mr. Harrod's account of Keynes' economics—more especially the economics of the *General Theory.* How complete is Harrod's account of the Keynesian schema? An answer is not always easy. In particular, the reviewer has to disentangle three things: (1) Harrod's account of Keynes' economics; (2) Harrod's own recent economics; and (3) Keynes' account of Keynes' economics.

We shall not be able to spend much time on (2). Possibly the economics implied in some of Harrod's descriptions of Keynes' ideas is not entirely consistent with some of Harrod's own recent writing, but I may be wrong in this. In any event it would require minute exegesis to substantiate it. What I do want to do here is ask whether Harrod's version of Keynes' theory is always sufficiently broad and inclusive. The fact may be that when a great man first has a new idea he is likely to express it in a very dogmatic and over-simplified form. And those who were his pupils, then, tend to carry with them through life preconceptions derived from this initial version. Such may possibly be Harrod's case. To be more specific, I do not doubt that Harrod's model of Keynes' system can be found in the *General Theory.* But I would suggest that several other models can be found there too.

Harrod's version of Keynes comes generally under the head of what has often been called "streamlined" Keynesianism. Like many streamlined Keynesians Harrod shows some tendency (in this book) to confuse Keynes' special, tentative assumptions with Keynes' *General Theory.* The basic assumption, I suggest, of all "streamlined" models, is the idea that there is a fixed

mechanical relationship between the consumption level and the *stock* of socially usable capital. On that basis it is possible to show how the process of net investment gradually eats away investment opportunities until the marginal efficiency of capital falls below the minimum liquidity-preference interest rate, investment stops and unemployment crisis begins. Autonomous upward shifts of the marginal efficiency of capital schedules are generally overlooked.

But to use this model, universally, leaves out of account the extremely limiting assumptions made by Keynes. "We take as given the existing skill and quantity of available labour, the existing quality and quantity of available equipment, the existing techniques, the degree of competition, the tastes and habits of the consumer" (*General Theory,* p. 245). Only on *those* terms did Keynes make his mechanical assumptions. And then he went on to say, "This does not mean that we assume these factors to be constant, but merely that, *in this place and context,* we are not considering or taking into account the effects and consequences of changes in them" (italics supplied). Again Keynes did not hold that "a rise in the rate of interest will decrease the actual aggregate of saving." He said (*General Theory,* p. 111) "(*assuming no favorable change in the demand schedule for investment*" [italics supplied]). Harrod, however, comes close to laying it down flatly that a "decreased propensity to consume will not be balanced by an increased propensity to invest" (p. 458).

The tendency to think in terms of a fixed marginal efficiency of capital (M.E.C.) schedule also leads Harrod (p. 455) to omit explanation of Keynes' concession of a possible *direct* effect of money wage cuts upon employment via the stimuli to the MEC. Keynes wrote "A general reduction [in money-wages] may also produce an optimistic tone in the minds of entrepreneurs, which may break through a vicious circle of unduly pessimistic estimates of the marginal efficiency of capital and thus set things moving again on a more normal basis of expectation" (*General Theory,* p. 264). Harrod leaves this qualification out entirely though presumably it is to be understood as included among the "further minor concessions" whose existence he mentions.

Because of this rather restricted version of Keynes' theory, Harrod's conclusions on "Keynesian" *policy* seem somewhat over-simplified also. Regarding the rate of interest, especially, I suggest that Mr. Harrod tends to be a bit sweeping. He writes "As a consequence of this general approach, and also of Keynes' specific pleading, it was not thought desirable, or indeed possible to check inflation by high interest rates. It would be quite safe to flood the market with liquid paper and keep the government interest rate at a low level. If Americans wish to assess Keynes' influence in their country, they should think, not of the New Deal, but of the low rates at which they were able to finance the Second World War. That was Keynes' personal contribution to American prosperity—one of no little moment" (p. 492).

But may this not also have been to some extent Keynes' personal contribution to American inflation? Furthermore, to the extent that Harrod's ideas may be founded upon the assumption that Keynes really had a *universally*

"purely" monetary theory of interest (other than "by definition"), and Harrod comes close to saying as much on page 459, it seems to me an oversimplification of Keynesian doctrine. I certainly do not think that the prevention of war inflation could have been handled by the interest rate *alone*. But I also do not think, and I do not believe it follows from Keynes' theory, fully expressed, that it would necessarily be "quite safe" to "flood the market with liquid paper." It is conceivable to me, for reasons shortly to be given, that if Keynes were alive today he might well be writing memoranda in support of the Federal Reserve System's attempts at credit restriction and raising the rate of interest!

How far, and to what extent, Lord Keynes' thinking had changed, or developed, toward the last, will naturally always be a debatable question. His last article, of course, shows an unquestionable increase in emphasis upon more orthodox international trade ideas. But I am inclined to suggest there were other developments too.

Mr. Harrod's selection of evidence on this point seems somewhat lacking in breadth. For example, if Lord Keynes approved Harrod's "Keynes and Traditional Theory,"[1] he also approved the general argument of the writer's "Future of Keynesian Economics."[2] And the man who found no "Major matters on which I wanted to challenge your accuracy" in that article, and "liked" it "very much" could not possibly have believed that the rate of interest was always a purely monetary phenomenon.[3]

Again Dr. John H. Williams of Harvard wrote in May 1948: "In my last talk with Keynes, a few months before his death, it was clear that he had got far away from his 'euthanasia of the rentier.' He complained that the easy money policy was being pushed too far, both in England and here, and emphasized interest as an element of income, and its basic importance in the structure and functioning of private capitalism. He was amused by my remark that it was time for him to write another book, because the all-out easy money policy was being preached in his name, and replied that he did think he ought to keep one jump ahead."[4] This note is also omitted from the *Life*.

Finally, though I have not seen the text of the Salant-Keynes correspondence, mentioned by Harrod on pages 508-9, would it not have been better, in view of the many rumors relating thereto, to give us something more than a brief abridgement and one passage of compliments. Problems like these are always matters of judgment. But I wish that the selection of evidence had been a bit more inclusive.

Because of lack of space only a few more points can be mentioned. Harrod's account of Keynes' writing, during the crisis of the 'twenties, confirms me still more in the opinion that for a variety of reasons Keynes refused,

[1] R. F. Harrod, *The Life of J. M. Keynes* (New York, 1950), p. 453; *The New Economics*, S. E. Harris, Ed. (New York, 1947).

[2] *American Economic Review*, Vol. XXXV (June, 1945), pp. 284-307.

[3] *Cf.* D. M. Wright, "Mr. Harrod and Growth Economics," *Rev. Econ. and Statistics*, Vol. XXXI, No. 4 (Nov. 1949), pp. 322-28.

[4] "Proceedings," *American Economic Review*, Vol. XXXVIII, No. 2 (May, 1948), p. 287, note 33.

almost to the end, to face the fundamental problem of how to maintain British real wage rates in the face of declining *relative* productivity. But I have explained my ideas on this point in my review of Klein's *Keynesian Revolution*.[5] I was however struck to read (p. 427) that so liberal a man as Keynes, and one who was so often himself a dissenter, should have "challenged the right of a single individual to put in a minority report" when Lionel Robbins dissented from the majority in the report on the tariff. Harrod writes concerning Robbins: "He was no doubt 'difficult' and Keynes felt this."

There are a multitude of points that have gone unmentioned but I will stop with only one. In the *Life* of Keynes it is repeatedly suggested (pp. 434, 451, 452) that Professor D. H. Robertson, in Keynes' opinion, could not "understand" what Keynes was trying to say. But after re-reading Professor Robertson's "Mr. Keynes and the Rate of Interest" in his *Essays in Monetary Theory,* an alternative interpretation has occurred to me. Could it not be that Robertson (who after all was hailed by Keynes as his intellectual "father") understood Keynes' argument better than Keynes often did himself?

As I end this review I find that limitations of space have led me to concentrate mostly upon points of criticism. The resulting impression, I fear, may be most misleading. Mr. Harrod has written an outstanding book, a fascinating book, and one for which we should all feel indebted. I do not wish my criticisms of detail to obscure the feeling of gratitude which all of us must have for his labors. Harrod's *Life* will always be indispensable to an understanding of Keynes—his life, times, and teachings.

DAVID McCORD WRIGHT

University of Virginia

[5] *American Economic Review,* Vol. XXXVIII, No. 1 (March, 1948), p. 145.

Ten Great Economists—from Marx to Keynes. By JOSEPH A. SCHUMPETER. (New York: Oxford University Press. 1951. Pp. xiv, 305. $4.75.)

This collection of essays is important for the light thrown on Schumpeter himself as well as for the insight given into the minds and writings of the subjects of his analysis. The systematizing, synthesizing predilection of Schumpeter—in preference to a more critical approach to the writings of any particular economist or to economic science in general, which might destroy or delay the construction of the complete logical edifice that was so dear to his own thinking processes—is abundantly illustrated throughout. Perhaps the essay on Böhm-Bawerk offers the best example of his aesthetic interest in logical construction. In general, it is no accident that he used architectural metaphors to give life to his own architectonic concepts in economic analysis.

The blend in this collection—biography, interpretation of the ideas of others, and Schumpeterian generalization of these ideas on a scale that surpassed the efforts of the authors themselves—is an excellent medium for displaying Schumpeter's talents, erudition, and other leading characteristics. His streak of generosity is always apparent, even when he was out of sympathy with much of what he was appraising. His strong histrionic trait,

manifesting itself in his showmanship, also appears prominently. That is probably at the bottom of the impish daring, amounting sometimes to rashness, in his more startling generalizations, although in many cases the ensuing shock is simply a question of the form in which he chooses to express himself. Nevertheless, such a statement as "Marx's . . . theory of history is not more materialistic than is any other attempt to account for the historic process by the means at the command of empirical science" (p. 12) is misleading because it diverts attention from the excessive reliance placed by Marx on the two propositions to which Schumpeter thinks the theory can be reduced. Even if these particular propositions were valid empirical generalizations, this excess would still be a great weakness in the Marxian analysis.

The reader may be provoked into reading or even re-reading Marx by the bold and sweeping characterization of this essay, but few will accept it as substantiating the claim to include Marx in the ranks of the great on a par with the nine economists proper in the list. Schumpeter recognized that Marx "bent the import of his final results" (p. 25); but this is hardly a severe enough judgment on the willingness of Marx to jettison theories and to warp logic to suit his purposes. And his *obiter dictum* that Marx had a profound vision, because "even though Marx's facts and reasoning were still more at fault than they are, his result might nevertheless be true so far as it simply avers that capitalist evolution will destroy the foundations of capitalistic society" (p. 53), may put Marx in the front rank of the necromancers but hardly of the economists.

In a short review it is impossible to comment on each of the succeeding nine Great Economists—Walras, Menger, Marshall, Pareto, Böhm-Bawerk, Taussig, Fisher, Mitchell and Keynes—arrayed in an order that seems to have been chosen according to date of birth. (If death had been the criterion instead, Böhm-Bawerk would have moved up to third place. Another possible criterion, more rational from the standpoint of what the book reveals of Schumpeter, would have been date of writing.) To the ten Great, three others are appended, Knapp, Wieser and Bortkiewicz, for whom Schumpeter wrote short obituary notices. In the case of Wieser this relegation implies no judgment by Schumpeter that he was less than Great, for in the essay on Menger, who "belongs to those who have demolished the existing structure of a science and put it on entirely new foundations" (p. 83), Wieser was described as an intellectual peer working "at the same level of original power" (p. 89) in founding the Austrian School.

The essays on Walras, Menger and Böhm-Bawerk were translated from the German, and it should be noted that Schumpeter was singularly fortunate to have left three pupils skilled in this difficult art, capable of writing English to match his own impressive style. For despite his frequent involutions (more in evidence in his German than in his English) Schumpeter was a stylist, and this was one basis for his admiration of the *Essays in Biography* of his great contemporary Keynes. His review of this collection, written on board ship in 1933 after one of his last adventurings in Europe while still steeped in the glories of the cathedrals of France, was fresh in Schumpeter's mind when he wrote his obituary essay on Keynes. That Schumpeter did not know Keynes well is not to be wondered at, for Schumpeter was a very Con-

tinental European, in strong contrast to the Cambridge economists who in the twenty years before the war were mostly a very self-contained group without many close contacts even with their fellow English economists. Nevertheless, the lack of close personal friendship bred no animosity so far as Schumpeter was concerned, to which the present essay attests.

Just as Schumpeter claimed that the *Essays in Biography* "sheds more light on Keynes . . . than does any other publication of his" (p. 260), so in his writing on Keynes light is shed on Schumpeter. The essay shows his penetrating understanding and his knowledge of the Keynesian literature surrounding the work of the master. It shows his generosity, for while he was critical, he could have pushed his criticism much farther, but he preferred to say of Keynes: "If we place ourselves on the standpoint of Keynesian orthodoxy and choose to accept his vision of the economic process of our age as the gift of the genius whose glance pierced through the welter of surface phenomena to the simple essentials that lie below, then there can be little objection to his aggregative analysis that produced his results" (p. 282). This is what Schumpeter in his dominant mood liked to do himself. And in many respects the essay illustrates his power of and liking for grand generalization. In the end he compares Keynes with Marx, it being possible to admire him "even though one may consider his social vision to be wrong and every one of his propositions to be misleading" (p. 291). He attributes to Keynes a "genuine" school—professing allegiance to One Master and One Doctrine —the like of which is to be found only twice in the history of economics, in the case of the Physiocrats and Marx. He also compares the influence of Keynes in British affairs to that of Churchill, which grew "until nobody thought of challenging it." This last generalization must cause many sceptical eyebrows to be raised, but it illustrates both the generosity and the showmanship.

The many references to "schools" of economists in this book evokes a memory of Schumpeter's first lecture at Harvard in 1927, which displayed his superb showmanship and his weakness for daring generalization. After underlining that he had inherited the title of the course, Modern Schools of Economic Thought, he confessed little interest in classifying economists in schools, though allowing that they often possess strong distinguishing characteristics. This was the prelude to a series of characterizations of (then) living economists of several nations, ending by the disposal of a prominent Swedish economist as 1 per cent Walras and 99 per cent water.

Of course this mood was momentary, as the treatment of "schools" in his *Dogmen- und Methodengeschichte* shows, and the generalization was a caricature, but the lecture served its histrionic purpose. On a more serious plane, the essays under review will do likewise. Their provocative generalizations will be stimuli, impelling the reader to turn to the original writings; while their penetrating flashes of insight, intermingled with sustained exposition of the economic analysis of the various authors, will prove to be valuable as guideposts to all who decide to carry their studies further.

Redvers Opie

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The Foundations of Economics. History and Theory in the Analysis of Economic Reality. By WALTER EUCKEN. 6th ed. Translated from the German by T. W. Hutchison, with an introduction by F. A. Lutz. (Chicago: University of Chicago Press. 1951. Pp. 358. $4.75.)

This unusual book sets out a fresh approach to the fundamental questions that economics seeks to answer. In this pursuit numerous observations from contemporary economic life and history are considered: (1) to test the assumptions underlying some of the most popular methods in economic thought; (2) to find an orderly frame of reference by which to organize the existing body of theoretical knowledge; and (3) to obtain a sound procedure for the scientific analysis of economic life. (This tripartition indicates, roughly, the organization of the book.) The basic observation "that every science as it develops, comes in danger of losing its direct grasp. . . . Economics is now in this position. It can only find a firm foundation by looking squarely at the facts and by asking simple decisive questions about them" is certainly as valid today as it was at the first writing of this book twelve years ago. During this period the book has not only aroused a lively discussion on methodological issues among European economists but also stimulated some actual research along the lines it proposes (references in the book). While it contains casual contributions to economic theory proper (*e.g.*, of the centrally directed economy [p. 119 ff.] or of monopolistic competition [p. 133 ff.]), its main significance is on the methodological level. Here the powerful tool of morphology is developed, which short of an adequate brief definition may be described here as the analysis of forms in which the economic process can occur. In the *Foundations* the morphology is actually applied to a reconstruction of economic theory. Emphasis is placed on the systematic aspects; only the key parts of elementary theory are worked out in detail, repetition of familiar material being carefully avoided.

This is a book of first rank which by its power of clarification and positive stimulation will well reward the American student. Its very concern with the elements of all economic thought should make it interesting to a large audience among economists. By a simple and well-arranged presentation and lucid style, admirably preserved in the English translation, its reading is a rare intellectual pleasure.

The first German edition of the book (*Grundlagen der Nationaloekonomie*) which differs only in minor points from the present 6th edition on which the translation is based was reviewed in this journal (Vol. 30 [1940], p. 587) by Professor F. A. Lutz. The reader may turn to this review and the short introduction to the book also by F. A. Lutz, for a more detailed description of the contents of the "Foundations" and of its influence on contemporary European economics.

Professor Eucken's position on the rôle of economic theory seems significant enough to merit full quotation: "People of a purely empirical attitude of mind usually view theoretical work unfavorably and are not prepared or able to appreciate its importance. They ought to realize clearly that they are denying themselves an understanding of economic life. This would do away with many of the misunderstandings of economic theory which are widely held

even among theoretical economists, for example, the view that theory consists of formulae that describe actual events, or that it represents a complete summary of experience, that its place comes at the end of a science, that experience is to be contrasted with theory, and that there are theories which do not agree with experience or 'practice.' Neither can theories be deduced out of definitions, nor is a theory some kind of nebulous generalized ideology. Genuine theories arise out of the application of reason to the study of the facts for the purpose of the scientific explanation of the real economic world. Ideologies being expressions of men's desires are frequently used as weapons in economic warfare, but simply obscure the view of the economic world. Finally, theory is not a system of concepts or definitions that has to be set out in advance of the study of the facts, without any basis in or relation with the real world. Theory properly understood does not come either at the beginning of economic studies, as the formalist economist believes, nor at the end, as the empiricist holds, nor separately and parallel, as the extreme dualists would have it but is, methodologically, at the center throughout. It is an instrument for enabling us to obtain scientific experience" (p. 300).

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Economics of Employment. By ABBA P. LERNER. (New York: McGraw-Hill. 1951. Pp. xv, 397. $4.00.)

Income and Employment Analysis. By SIDNEY WEINTRAUB. (New York: Pitman Publishing Corp. 1951. Pp. xi, 239. $3.00.)

The two volumes here under review have been written at different levels to different audiences with different objectives in mind. Lerner's *Economics of Employment* is written as an introduction to the subject presupposing no advance training or preparation, while Weintraub's *Income and Employment Analysis* is aimed at the intermediate level following the introductory course. Lerner hopes to serve the broad and important field of adult education and general readers as well as the usual academic market; Weintraub has written for the regular college student. Lerner's *Economics* is theory *and* policy, while Weintraub deliberately "abstains from drawing policy implications or from spinning concrete proposals for social action."[1] Lerner would doubtless agree that "policy transcends a knowledge of the determinants of the income and employment magnitude. . . . In a free economy the routes to full employment and high income levels are numerous and multidimensional. Extra-economic considerations, as well as preferences and predilections, bulk large." But Weintraub seeks to keep his analysis "free of preconceptions about an enlarged rôle of government"; Lerner, in contrast, introduces the "missing steering wheel"—Functional Finance—in the very first chapter and goes on from there.[2]

[1] All quotations in this paragraph are from Weintraub's Preface, p. vii.

[2] *Cf.* however, Lerner's argument that "Functional Finance only brings about the substitution of a more reasonable new rule for the old rule. It does not increase the power of the government" (p. 183).

Weintraub begins by developing the concepts and structure of the national income accounts and reviewing some of the empirical evidence regarding the functional relationships involved. A series of chapters then analyzes each of the major components of aggregate demand. Special attention is given to the underlying economic, psychological, and institutional factors determining their magnitude. In developing the basic functional relations entering into the Keynesian model, particular stress is placed on the interaction of these functions and the implications of shifts in their positions. This basic model of income determination is later broadened to incorporate the additional factors and functions needed to analyze levels of employment and prices. The volume concludes with chapters summarizing the recent literature on the relationships between wage levels and employment and between alternative rates of investment and anticipated (and/or sustainable) rates of economic growth.

As in his *Price Theory,* Weintraub here offers a volume which clearly reflects wide study and much thought on the author's part. The content is appropriate for the intermediate level course whose primary focus is the theory of income, employment, and general price levels with emphasis on equilibrium positions. Though the volume is not without error,[3] it should be a successful basic text when supplemented by classroom lectures and discussion, and also by appropriate outside readings in the literature—as always seems desirable at the intermediate level.

Lerner's *Economics of Employment* is essentially an elaboration of his famous article on "The Economic Steering Wheel." As the author states in his own preface,[4] this article (which is reproduced as the first chapter of the present volume) gives a "preview of the thesis of the whole book." Two further preliminary chapters on the meaning and importance of full employment are followed by an unusually lucid account at an elementary level of the Keynesian theory of income determination. The treatment of the interrelationships of income, saving and the interest rate in this model is especially clear. Unfortunately, however—although this account of Keynesian theory takes up four of the five chapters which are "probably the most difficult" part of the book—it does not go beyond the rather primitive stage in which the money supply determines "the" interest rate and thereby the magnitude of investment which *via* a given and fixed multiplier determines an equilibrium level of income. The national income enters only as something which is definitionally equal to total spending, and curiously enough, the effects of cash balances, bond holdings, and changes in real wealth on the consumption function are not introduced until late in the volume when they are needed in order to avoid reaching a conclusion that continuing large increases in the national debt would have no adverse effects at all. It is also interesting to find the author telling the reader in his preface (p. viii) that "it is even possible to skip these chapters (*i.e.,* those giving his development

[3] For instance, the calculation of the marginal efficiency of capital from a projected income statement, p. 93; also, the intersection at "Yo" in Figure 10.6 (A), p. 169, as an indication of an *equilibrium* level of income.

[4] Lerner, *op. cit.,* p. vii.

of Keynesian theory, simplified as it is[5]) altogether without running into serious difficulties in the rest of the book."

But "no one should skip Chapter 8 on Functional Finance." This is indeed the heart of Lerner's "Economics of Employment." Previewed in Chapter 1, stated in Chapter 8, it is defended against critics from both the right and the left in four chapters and given a "closer view" in another four. As is perfectly appropriate in an introductory text, however, little real substance of an analytical or policy-determining significance is added to his previous writings on the subject. Along the way a chapter on the business cycle is included, the moral of which is simply that we really don't need to know very much about the facts and the why's and wherefore's of cyclical fluctuations to be able to administer a program of Functional Finance with a tolerably high degree of success.[6] The international aspects of Keynesian economics are well developed in another pair of chapters, and the volume closes with a chapter on "Economics, Politics, and Administration" which is guardedly optimistic on the grounds that "although society learns slowly, it nevertheless does learn."

Space limitations forbid offering this reviewer's appraisal of the merits, limitations, and necessary modifications of Functional Finance, as such. Nor is such appraisal needed here, since Lerner's position is well known; its insights and genuine contributions as well as its limitations and disadvantages have been widely analyzed in the literature and will doubtless continue to be. Suffice it to say that Lerner here turns in a performance that is typical of all his work—urbane, skillful and even ingenious in exposition,[7] stimulating, provocative, well worth reading. Nonetheless, the volume leaves at least this reviewer with considerable "underlying uneasiness."[8]

At bottom, this uneasiness stems from a doubt that the real world is as neat and as very simple as Lerner's abstract analysis would make it appear, and from a deep-seated concern over the absence of any consideration of the empirical basis and adequacy of the theory presented. *Within its limits,* the analysis is unquestionably cogent and penetrating. Once all its premises are

[5] Even though Lerner's treatment of Keynesian theory is generally quite elementary, it should be noted that his treatment of Say's Law and of the multiplier in process analysis is refreshingly stimulating and original.

[6] "It is more important to prevent business cycles than to explain them and it is not unscientific to act to prevent them without knowing the causes of the prevented fluctuations in the level of spending and the causes of those causes and so on. . . . To suppose that it is necessary to know the dynamic interrelations of all economic events in order to be able to have a full-employment policy is like arguing that it is impossible to ride a bicycle because the mathematical treatment of this project is very difficult. In Functional Finance, as in riding a bicycle, it is sufficient to see the direction in which correction is necessary and to have some notion of the general order of magnitude of the correction. We can rely on the same stability of the system which has made it workable even without Functional Finance" (pp. 317-18).

[7] Granting this, many readers will doubtless feel he is overly given to striking statements, particularly if they are at the same time paradoxical.

[8] The phrase is Lerner's; *cf.* his review of J. R. Hicks "Contribution to the Theory of the Trade Cycle," *Econometrica*, Vol. 19, No. 4 (Oct., 1951), pp. 472. The grounds of my uneasiness are, however, very different from his.

granted,[9] logical validity is assured; but explicit premises are justified only by assertion and other conditions necessary to the adequacy and to the broader validity of the argument are never indicated,[10] even though such broader validity is asserted flatly and without qualification or restriction.[11] This volume is not offered as "An Introduction to *Some* Important *Parts* of the *Theory* of Employment." It professes to be *The Economics of Employment*—pat and complete in all essentials. Lerner assures us in his preface "I have not found it necessary to leave out any part of the heart of the argument. . . . This book does, I think, go to the bottom of things."[12]

This volume includes no factual data whatsoever even on such presumably relevant things as the national income and its major components, the amount of employment and the size of the labor force and its changes under varying conditions, money supplies, liquid assets, types of savings, prices, and so on; there is not even any reference to the fact that there have been studies of such data attempting to ferret out their importance and develop empirically acceptable explanations of their observed behavior, let alone any indication of the character of the results of such inquiries. Are such mundane matters and studies irrelevant or is it simply that they are not part of Economics, "properly" defined? Even if the Economics of a subject is restricted by definition to its theory, are we to infer that investigations of the degree of cor-

[9] Some of Lerner's explicit premises are unquestionably extreme. As an illustration, the unquestioned fact emphasized by Keynes that the motives of many savers and many investors differ markedly and that a substantial part of all saving and investing is done by separate groups of people becomes for Lerner a complete dichotomy for his "topsey-turvey" world (*i.e.*, conditions of less than full employment). But surely, even under these conditions, not all thrift reduces income (*cf.* p. 246); witness increased corporate retention of earnings to finance specific new investments, the large fraction of positive "personal" savings which merely reflects and directly provides for investment in unincorporated business, the individual thrift which makes possible that individual's purchase of a new home, etc.

[10] As a guide for policy, the adequacy and reliability of economic theory depends not only on the practical relevance of the particular relationships assumed between the variables taken into account, but also on the adequacy of the "coverage" of the theoretical structure itself—whether other factors not incorporated in the models are significant. The perils of *ceteris paribus* are still with us even when the great advances of the last two decades are fully exploited: the leverage of excluded variables and relationships may be great. The problem is that Lerner never even suggests that there may be important omissions in his coverage, let alone assess their potential significance.

[11] In this, as in the question of empirical content, Lerner's volume stands in marked contrast to Chapters 11 through 19 of Samuelson's *Economics,* which covers much of the same area and is aimed at about the same level and audience. See especially the latter's statement (p. 394): "The reader is warned that the subject matter . . . is still in a controversial stage. . . . It is idle to believe that, in the present inadequate state of our scientific economic knowledge, economists are in agreement as to the importance of the pros and cons. No reader should form his opinions upon the basis of a hasty reading of some superficially persuasive argument." In this reviewer's judgment, the need for such a warning is far greater for Lerner than Samuelson.

[12] P. viii. Between the two sentences quoted above, he scornfully remarks that "Many alleged popularizations of difficult subjects fail because they leave out what they promise to simplify. Such a procedure leaves unsatisfied the readers' hunger for understanding and adds to this injury the insult of implying that he is really not up to understanding the true explanation of the matter."

respondence between the assumptions and/or the predictions of the theory and observable fact are immaterial so that the only theory qualifying as Economics is that narrow category of pure theory based on assumptions which are so obviously valid as to be unquestionable?

If at least some of these questions must be answered in the negative, it would seem essential that even an introduction to the Economics of a subject gives some reasonably tangible indication of the empirical content of the world being discussed theoretically and of the world in which the policy implications of the theory would work themselves out—something which Lerner supplies only through unsupported assertions.[13] This seems especially important in the present case because, as already indicated, Lerner is writing both theory and policy. Moreover, quite apart from empirical discussions and analyses, the theory presented in the volume seems quite limited and overly simplified. Lerner's discussion, even at the level of pure theory, falls far short of suggesting the range of insights and theoretical considerations developed in Keynes' original general theory, let alone the important developments of that initial analysis (often drawing on non- or pre-Keynesian theory) since made by such writers as Hart, Hansen, and Hicks. To be sure, very few of these matters could be developed very far in an introductory volume, but given Lerner's great skill as an expositor and the tone of his writing, the fact that they are not even suggested indicates his judgment that they are really irrelevant or at least not very important; but once again, no empirical justification is offered.

Each reader and potential user of the volume will have his own reactions to the issues raised. But this reviewer at least cannot avoid a feeling amounting to conviction that if this indeed be "The Economics of Employment," the gap between economics, so defined, and the broad, comprehensive analysis which alone can provide an adequate base for responsible policy determination is far greater than he and most other economists have been prepared to admit.

In conclusion, it should be noted that both Weintraub and Lerner make potentially significant contributions to the literature. While neither author's contributions are fully developed or unexceptionable as they stand, they are suggestive and merit the critical attention of professional specialists. They will be especially valuable as fodder for graduate seminars. Weintraub's chapter on "The Price Level" comes to grips in a stimulating way with an element of unquestioned importance which, until quite recently, remained in the dark interstices of the Keynesian analysis. Similarly, Lerner's distinction between "high level"[14] and "low level"[15] full employment, his estimate that the latter would involve nearly six million unemployed in this country,[16] his

[13] In fairness to Lerner, it should perhaps be added that he is, of course, not the only eminent economist to have used vigorous assertion and a confident tone to mask his failure to supply any real empirical basis for his analysis.

[14] The level where employment is unresponsive to further increases in spending.

[15] This is the level of employment beyond which increased spending *begins* to increase wages and prices as well as employment.

[16] This estimate, incidentally, involves virtually the only quantitative empirical material in the book, and it is offered as the merest guess.

attribution of the difference between high- and low-level "full employment" exclusively to "the excessive bargaining power of labor," his companion argument that "high full employment requires a wage policy rather than a price policy," and his wage policy for achieving higher levels of full employment without inflation[17]—all these are provocative and worthy of further study, critical examination and development which will take account of the many difficult theoretical and practical problems they raise.

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[17] This is to be achieved through the device of gearing changes in *individual* wage rates to an index of "relative attractiveness" while *average* wage rates increase at 3 per cent per annum to match average gains in productivity and thus insure a stable general price level.

Histoire des Théories Économiques. By ÉMILE JAMES. (Paris: Flammarion Editeur. 1950. Pp. 329. 450.- fr.)

This new French history of economic theories follows in the tradition established by F. Bouke, G. H. Bousquet and B. Nogaro. Unlike Gide and Rist who, as the author acknowledges, evoked his interest and devotion to the subject, Professor James wants to free the history of economic thought from the normative and doctrinaire elements of thinking contained in numerous schemes of economic and social reform usually included in the Continental and English literature on the subject. To separate doctrine from theory, evaluation from explanation, and controversial value judgments from systematic analysis of reality—these are the aims which the author feels should guide the writing of history of economic thought. Moreover, he insists that three specific objectives need to be kept in view in such an enterprise: (1) To set forth the different systems of theoretical conceptualizations (models, constructs) used by different schools in order to represent reality; (2) To show the influence which dominant philosophical systems have exerted on the evolution of economic theories; and (3) to describe the progress made in the discovery of the natural laws which govern the operation of the economic mechanism ("natural laws" in the sense of necessary relations between economic phenomena).

The author is aware that this kind of history of economic thought still remains to be written mainly because of the inherent difficulties of such an undertaking and partly due to the fact that the borderline between doctrine and theory has remained indeterminate. This accounts for the fact that while the accent in his volume is clearly on the progress of economic theory, the author has made repeated and extensive allusions to economic "doctrine." Let it be said from the very outset that within this given framework and subject to the qualifications which he himself recognizes, the author has succeeded admirably in writing a new history of economic theory which is likely to preserve its value for students and professional economists for a considerable period of time. The success of the volume is due to several factors among which the following may be listed: A judicious and balanced distribution of emphasis on "theory" and "doctrine"; a periodization of the material which

permits the author to convey a sense of continuity while at the same time enabling him to highlight the interaction of social reality, dominant philosophical conceptions and economic theory; a sense for the importance of and interrelations between different elements and concepts which together make up the theoretical apparatus of the different schools; an extraordinary clarity of exposition; an attempt to carry the story of economic analysis into the present with a lucid summary of recent (especially Swedish) contributions to economic dynamics; and a very useful analysis of some subtle distinctions of different concepts of natural law and their influence on economic thought in France and England.

A few minor criticisms concern the author's rather traditional interpretation of mercantilist writers (their alleged confusion of money and wealth for which references that are not taken out of context are still lacking); his statement that Petty speaks little of rent (p. 36), whereas Petty devotes considerable space to his doctrine of "natural" and "true" rent and contrasts it with money rent in a manner which shows complete awareness of, if it did not actually originate, later theories of surplus value and thinking in terms of equilibrium concepts; his assertion that Edgeworth and Pareto's use of indifference curves created a system of pure economics independent of hedonism (p. 211), whereas it is at least debatable—and is being debated—whether the mere elimination of quantitative comparisons of marginal utilities while still preserving the notion of constant and given preference schedules frees pure economics from the hedonistic calculus. But these are perhaps minor questions of interpretation.

A more searching criticism must refer to two things: (1) The absence of any attempt to view the emergence of a system of pure economics since Jevons and his mathematical predecessors in relation to the general trend toward subjectivism in the general stream of thought of the latter half of the 19th century. This is in contrast to the author's adherence to his procedure in the case of medieval, classical, historical and Marxian schools of thought, all of which are discussed in relation to their underlying philosophical frameworks. The reason for this apparent neglect to inquire into the philosophical premises of neo-classicism may well be the fact that the author takes these premises of pure economics so much for granted that it is impossible for him to be either conscious of them or to make them explicit to his readers; (2) A slightly ambivalent attitude towards pure economics and its limitations. While he considers the formulation of an autonomous system of pure economics concerned with what are regarded as eternal and inevitable economic relationships (*i.e.*, independent of all institutional differences) as an important advance, he seems to accept (in another context) a good deal of the criticism currently directed against the methodological presuppositions and procedures of pure economic theory (*e.g.*, their "empty-box" character; their lack of realism; their utilization of an outmoded psychology; their inability to make much headway toward a system of economic dynamics; their neglect of macro-economics, see pp. 219-24). What intrigues this reviewer in this connection is the question of whether in order to overcome the above limitations

it will not be necessary to surrender once and for all the claim that economics is an independent and autonomous science.

None of these questions, however, can detract from the fact that James has written one of the most significant and comprehensive texts on the history of economic theories currently available.

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Testament for Social Science—An Essay in the Application of Scientific Method to Human Problems. By BARBARA WOOTTON. (New York: Norton. 1951. Pp. vi, 197. $3.00.)

An urbane and informed treatment of the promise held out for mankind by the social sciences is long overdue, and the present extended essay by the professor of social studies at the University of London is a partial fulfillment of the opportunity. Professor Wootton writes a wonderfully clear statement of the nature of scientific thinking and of pre-scientific ways of thought. Two blind alleys are provided with warning signs: false analogies from the study of organisms, and false inferences from the application of Marxism.

The chapters in which metaphysics, morals and the arts are put in a scientific perspective are courageous and penetrating. In general, the vista of service that opens up as the scientific mode of thought becomes more universal is vast and heartening.

The excellencies of the volume enable one to discover the limitations of an effort of this kind to prepare an introduction to the social sciences addressed to fellow intellectuals, to students, and to thoughtful laymen. I suspect that the essay is too formalistic and insufficiently "institutional." The impact of the book would be greater if the historical perspective were richer, and if the general remarks about a favorable environment were made more meaningful by drawing upon our knowledge of the growth of special thinking and interpretation in this field.

The Essay has rather too little to say about some of the ways of thinking that have an important bearing upon the nature of the contribution that the disciplined study of society can make to policy. I have the "developmental construct" in mind, by which is meant hypotheses about the significant features of the historic period through which we are passing at any given time. By considering the "from what, toward what" of the social process we can arrive at estimates of where it is particularly important to deepen and widen our knowledge. The most influential "construct" of modern times, if we deprive it of its false claims to "scientific" grounding, is the Marxist hypothesis of the passage from "capitalism to socialism." Today the hypothesis of passage from "business societies to garrison-police states" is more credible. In order to prevent or mitigate such an outcome, renewed intellectual effort needs to be directed toward problems, many of which have been neglected in the boom years of modern history.

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Money, Trade, and Economic Growth—in Honor of John Henry Williams. (New York: Macmillan. 1951. Pp. xi, 343. $5.00.)

The seventeen essays of this excellent volume are in honor of John Henry Williams, since 1933 professor of political economy at Harvard and economic adviser to the Federal Reserve Bank of New York. The contributions deal with three broad topics: international economic organization and world trade; determinants of income and economic stability; and monetary theory. In the first category, David McCord Wright discusses the theory of intergovernment trade, concluding that even if all international trade were monopolized by governments, the academic market theory of international trade would not be wholly irrelevant, but that substantial modifications would be in order. Henry C. Wallich contributes a study of the effects on underdeveloped countries of the particular monetary mechanism linking them with the rest of the world, covering the relationship between the international arrangements of a country and its money supply, its income structure and fluctuations, its exchange rate and balance of payments, and its possible patterns of development. Robert Triffin summarizes the institutional developments since the war in the Intra-European Monetary System which led up to the European Payments Union, concluding that success depends upon multilateralization of gold settlements and credit margins, progressive liberalization of exchange and import restrictions, and the creation of automatic and administrative mechanisms for balance-of-payments readjustments. Charles P. Kindleberger discusses proposals for European economic integration—European-wide, customs union, planning, and payments clearing—in relation to the recovery problem in early 1950; his conclusion is that the benefits of purely European integration have been exaggerated, both because many important problems are internal and because the desirable pattern of European integration can only be determined with reference to the integration of Europe with the rest of the world. Raymond F. Mikesell next considers some of the fundamental problems involved in the economic integration of sovereign states, stressing that the essential elements of such a program are the free play of market prices in the uncontrolled sectors of the entire area and the coordination or centralization of controls over the controlled sectors—especially control over investment in general and in basic industries in particular. The section is concluded by Camille Gutt, writing on the policies required to make devaluation effective. He stresses the difference between devaluation in a period of depression and inflation, and contends that in the later period improvements in the balance of payments will not in fact be realized unless devaluation is backed up by appropriate monetary, fiscal, and wage stabilization policies.

The lead contribution in the second section on the factors influencing the level of domestic economic activity is that of William Fellner, discussing the rôle of the capital-output ratio in dynamic economics. Starting with the hypothesis that if employment is to be full in any period, the rate of growth of output must require enough new capital to absorb the savings out of income of the period, he suggests that there are forces tending to correct divergences

between new capital requirements and savings, so that inadequate investment (and hence effective demand) can ultimately only be explained by specific maladjustments or uncertainties—though these may be induced by the very corrective adjustments that are required. In the second contribution James Tobin examines whether the ratio of savings to income depends on the absolute size of family income or on size relative to incomes of other families. He concludes that the absolute income hypothesis gives a better explanation, whether tested on the budgets of the same families over successive years, on budgets of Negro and white families in the same city in the same year, or on budgets of families in different cities in the same year (though net saving in some cases appears to depend on a combination of asset holdings and income); the main appeal of the relative income hypothesis is its success in explaining the long-run constancy of the saving ratio. The third contribution is that of Paul Samuelson, containing a neo-classical reformulation of principles for fiscal policy. Contending that the best argument against convenient rules for fiscal policy is the rules that have been proposed, which on close examination turn out to be either arbitrary or empty, Samuelson suggests that the level of government expenditure and the sources of government financing must be continuously adapted to changing circumstances by conscious discretionary policy rather than by arbitrary rules of thumb. Edward S. Mason concludes the section with a discussion of prices, costs, and profits. Starting with a confession of ignorance as to what type of wage and price behavior is best suited to check a business downturn, Mason suggests that public policy designed to sustain aggregate expenditures by wage-rate increases without price increases (in the absence of controls) will almost certainly fail. Under present circumstances persistent upward pressure on prices can only be avoided if excessive wage increases are restrained by the possibility of large strike losses inflicted by employers fearful of their competitive position; but such fears are greatly reduced by "pattern" wage settlements for the entire economy or by the expectations likely to be generated by a government full-employment program, so that a full-employment guarantee may well be inconsistent with the maintenance of a free society.

The final section on monetary theory and central banking starts with some notes on the theory of interest by D. H. Robertson, who concludes that recent contributions have left us with an all-but tidy "classical" (in the sense of one where money operates to interpret and not distort "real" forces) theory of interest—which can then be complicated with "neo-classical" or monetary elements. He goes on to argue that to put the classical forces "under the liquidity hat" is almost bound to cause confusion in thought and policy, illustrating with some examples of the confusion into which Keynes himself fell, and he concludes that fuller recognition is needed of the greater importance of the long-term rate and the the two-way influence operating between the long- and the short-term rates. E. A. Goldenweiser next discusses monetary semantics; pleading for terms like "oligopsony" which may enlighten few but mislead practically none, he warns of the difficulty of getting public acceptance for policies which glorify the spendthrift or make the entire cycle depend on the "inclination" (propensity) to save. The third con-

tribution is a discussion of money, liquidity, and the valuation of assets by R. A. Musgrave. Regarding its store of value function, Musgrave argues that money is simply one among many assets, so that a general theory of asset holding is required. For this purpose a simplified model of a market for assets, including money, debt, and goods (equity), is presented (in general terms in the text and more rigorously in an appendix), designed to provide a more realistic basis for monetary discussion than the conventional liquidity function. Perhaps the most interesting policy conclusion which emerges is that the Treasury has a wider choice of assets effects than the Federal Reserve, so that there is a conclusive economic case for combining in one authority the open market function of the Reserve System and the debt management function of the Treasury. Leon H. Dupriez, professor of economics at the University of Louvain, next presents a summary of a study which concluded that the relationship between the stock of gold and the long-term trend of prices alleged by Cassel is supported neither by history nor logic. Instead, although the note issue of central banks correlates positively with price movements, their gold holdings correlate *negatively—i.e.,* gold holdings increase fastest when prices are *falling*—so that it is "need" rather than gold that appears most important in explaining price movements. The rediscovery of money is the subject of Howard S. Ellis, who puts the blame for the eclipse of money in large part on *The General Theory* with its liquidity-preference interest rate theory of general equilibrium, its emphasis on consuming-saving rather than spending-hoarding, and its use of wage-units which served to conceal price-level problems. After making the general case for monetary controls, the paper goes on to summarize the recommendations of the Douglas Subcommittee, which Ellis believes has made a positive contribution deserving to be ranked with the Bullion Report. The next to last paper is that of Robert V. Rosa, which discusses interest rates and the central bank. Starting with conceptual developments which stress the rôle of *lenders* in contrast to borrowers and savers, Rosa suggests that recent changes in the credit system—especially the greatly increased importance of government debt—have gone far to establish the implicit premises of Wicksellian interest theory by increasing the ability of the central bank to affect loan rates of commercial banks, by increasing fluidity between short- and long-term rates, and by making interest rate changes more directly influence economic decisions. The remainder of the paper explores the effect on the scope of central bank action of these changes in the credit system. The final contribution is that of Allan Sproul, writing on changing concepts of central banking. Proceeding historically, Sproul discusses the prewar climate, war finance, and the steps taken in the struggle to reconvert credit policy and free it from Treasury domination; he concludes with a discussion of new concepts of credit policy, which contains both an affirmation of what can be done by means of monetary policy (in conjunction with fiscal policy and debt management) and a plea that such policy be implemented through the use of existing tools.

The standard of all contributions is uniformly high. They are, however, of widely varying difficulty, so that the volume is likely to be read almost exclusively by professional economists and central bankers—which is a pity, as I

would like to see a far wider audience for a paper such as that of Mason. But those who do read the essays will be well rewarded.

HENRY H. VILLARD

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The Postwar Financial Problem and other Essays. By F. W. PAISH. (London and New York: Macmillan. 1950. Pp. ix, 263. $3.00.)

One cannot read these essays by F. W. Paish without admiring the insight, technical virtuosity, and expository skill of their author. Yet owing to the narrowly specialized character, or sometimes transitory interest, of most of the topics covered, the volume is likely to have a more limited appeal than it deserves. With disconcerting frequency the patient reader finds nuggets of unique and original analysis, or of lucid and provocative argument, hidden behind the façade of an uninspiring title or buried among pages of wearisome figure-citing. Even the title of the volume is an inaccurate guide to its contents. Only five of the twelve essays included were written after the war, and one of them, "The Economics of Rent Restriction," deals only tangentially with the financial problem. If there was good reason to require the seven essays of the 1936-41 period to travel incognito, and it is not clear why there was, the honor of the cover might better have been awarded to "Planning and the Price System." This, as the author himself says, is the essay "which reflects most clearly my own prejudices and beliefs." He describes it as "a plea for the use of the price system for carrying into effect whatever policies a Government may have," and this, indeed, is the theme of all the postwar essays, including that on rent restriction. The financial problem is discussed primarily because its solution is regarded as the necessary precondition for allowing the price mechanism to render proper assistance to the planners.

Appearances to the contrary notwithstanding, the viewpoint is not Austrian. Paish is too subtle an economist, and too sensitive to the relevance of those social values which are unexpressible through the market, to place a doctrinaire faith in the price system. The difficult course which he attempts to plot would seek to avoid both the Scylla of untrammeled market freedom and the Charybdis of restrictive controls.

The essence of the argument, which is a blend of macro- and micro- analysis, is developed without statistical encumbrances in "Planning and the Price System" (1947). Here, in a lucid introductory exposition which would make admirable supplementary reading for basic courses in economics, the functions and defects of the price system are described and evaluated. A properly functioning price system, it is argued (perhaps without sufficient premonitory qualification), "would achieve that complete identity of private with social objectives which it is the principal function of Government to promote." But price systems will not function properly, and will not produce ideal results, merely if left to themselves. They do not prevent business fluctuations; they are vulnerable to monopolistic interferences; the distribution of income produced by unguided market forces will ordinarily differ from that regarded by society as desirable; distortions are introduced by the differences between private and social benefits and costs; individually motivated market behavior

can give no expression to collective social goals; and ignorance and incompetence prevent some citizens from being able to act in their own best interests. Each of these defects justifies its own particular type of government intervention if social objectives are to be achieved. The question is not, therefore, whether there shall be government intervention, but what kind.

To carry out its policies, the government can employ three types of incentives to induce citizens to act together for the common good: "the incentive of law, backed by the sanction of punishment; the incentive of the social conscience, backed by the pressure of public opinion; and the incentive of the market, backed by the pressure of the price system." The problem in Britain, says Paish, turning from general principles to their application, is that the existence of suppressed inflation has prevented the government from making effective use of the third incentive. Instead, there is a whole series of controls, and prices have ceased to perform their functions as indicators of social priorities. The government has failed "so to control the price system that it pulls *with* Government policy instead of *against* it."

The remainder of the argument is a summary of points elaborated in two largely empirical essays also published in 1947. These expressed the view that the root of the financial problem was the excess of expected investment over voluntary saving, which seems commonplace enough. Unlike many of his colleagues, however, Paish was reluctant to delay the restoration of British real capital either by drastic cuts in the government program of capital creation ("The Postwar Financial Problem") or by credit contraction to curtail private investment ("Cheap Money Policy"). His view was that balance should be restored by means of enforced saving. But—here picking up a theme developed in an essay written in 1941—the enforcement of saving had to be achieved in a manner that would not interfere with the incentives to work and to produce. More intensive rationing would not meet this requirement. Nor would a budget surplus, the only other alternative, achieved through increased direct taxation. Only indirect taxation, it seemed, was left. To operate this device, prices of non-essentials should be allowed to seek their own levels, but the potential windfall in profits should be eliminated by the imposition of purchase (sales) taxes. And if the resulting reduction in the production of non-essentials was inadequate, taxes could be raised even further. While this policy might lead to some adverse redistribution of real income, Paish thought that under British conditions its extent would be small, and that a workable system of compensating family allowances could readily be devised.

To reject Paish's advocacy of indirect taxation *a priori* on the traditional grounds of its regressive character would do his argument an injustice. His confidence that the regressive feature could be offset, given the will to do so, may be open to question. So, too, may the effectiveness of indirect taxes as a device for simultaneously channelling resources according to plan and under the surveillance of market prices. Nevertheless, any scheme designed to marry aggregative with atomistic analysis, and to make full-employment policy and planned resource allocation live happily together with a minimum of direct control, deserves more than casual dismissal. Simple though it seems, Paish's observation that "The true choice is not between plan and no plan, but be-

tween planning through the price system and planning against it" may, in its own due time, prove to have been a trenchant insight.

The seven essays published between 1936 and 1941 reveal certain definite interests and contain some common threads, but they do not, like the postwar collection, constitute a closely knit group. The earliest of these, "Banking Policy and the Balance of International Payments," broke new ground and had previously been republished in *Readings in the Theory of International Trade.* Not only does this essay develop the marginal-propensity-to-import concept, but it includes an extended discussion of the effect of changes in the liquidity of spending units on the volume of their expenditures. This approach is applied to a concrete situation in a second essay on forecasting foreign trade, and the concern with liquidity reappears in a different guise in the discussion of "British Floating Debt Policy." Here again the essay includes a lucid exposition—in this case of the concept of liquidity—for which the title provides no clue. Another instance of buried treasure is found in "Causes of Changes in Gold Supply," which contains an outstanding example of the successful blending of economic, technological, and business analysis. Though the specific problem attacked is the effect of changes in the price of gold, or in factor costs, on the management policies of South African gold mines, no one interested in any phase of business policy with respect to long-term investment and current operations could fail to obtain useful insights from this careful and systematic treatment. Finally, it may be noted, "Twenty Years of the Floating Debt" is mainly of historical value for its description of the operations and policies of the Exchange Equalization Account up to 1939.

It is a pity that Paish's penchant for writing for specialists has hidden his light. The exceptions suggest that he could, if he wished, reach a much wider audience, for his talents are, in some respects, unique. Perhaps he would do well to model his essay style more on that of Keynes, of whom it could scarcely be said that he allowed an excessive preoccupation with minutiæ to dull the brilliancy or soften the impact of his argument.

CHANDLER MORSE

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The English Utilitarians. Vol. I, *Jeremy Bentham.* Vol. II, *James Mill.* Vol. III, *John Stuart Mill.* By LESLIE STEPHEN. Series of Reprints of Scarce Works on Political Economy, Nos. 9, 10, and 11. (London: London School of Econ. and Pol. Sci. 1950. Pp. viii, 326; vi, 382; 525. *£2.2s* per set.)

After fifty-two years Sir Leslie Stephen's work in three volumes, *The English Utilitarians,* is still a standard work describing philosophical empiricism and the so-called political radicalism of Jeremy Bentham, the two Mills, their followers and their opponents. Stephen, agnostic, philosopher, man of letters, and mountaineer, writes vividly without Victorian flourish; he has the rare gift of bringing to life personalities and epochs of British society. The work is a history of utilitarian ideas; it ties together ideas with social and economic changes. Stephen does not write as an outside observer, but as an active participant in the utilitarian movement. According to him, neither the Scottish philosophers (Reid and Dugald Stewart) nor the revivers of Catholic religion

like Newman, but only Jeremy Bentham, James Mill, John Stuart Mill and their numerous followers are on the right track towards formulating an empirical philosophy without metaphysics, *i.e.*, a scientific morality, and presenting a political and economic program based on political freedom. Stephen's slant of thought does not prevent him from interspersing his narration with subtle criticism of his forerunners, whose philosophical and moral principles he does not always approve.

Economists will be very much interested in Stephen's presentation of classical economy. It does not seem that economic theory is his special field. His interest is focussed on economic and political programmes and their realization. What he has to say about Ricardo's and Malthus' aversion to "impulsive philanthropy" and "sentimentalism," about their propaganda of "do nothing" policy, and about the Tory and Socialistic opposition has been frequently dealt with by other writers. But seldom has so much first-hand material been presented so clearly. The story of the younger Mill's great heresy, his criticism of "do nothing" government, his advocacy of peasant-proprietorship, his defense of labor unions, is happily introduced by Stephen's question: "Given Ricardo's premises, are we to realize Owen's aspirations?" (Vol. III, p. 159). The predilection of the utilitarians for economic studies is, according to Stephen, based on three factors: social interests, pain and pleasure morals, methods.

The utilitarians, so Stephen asserts, write the philosophy of the industrial middle classes; and the industrial middle classes are obviously interested in economic principles which propagate their interests. Bentham's moral aim "the greatest happiness for the greatest number" can be achieved by "natural" laws of free competition and sexual prudence. Even John Stuart Mill's ethic is based on the happiness-calculus, yet in his writings this goal acquires an altruistic and humanitarian tendency not known to Bentham. Mill's altruism opens the way to a more positive attitude to government intervention.

Stephen claims that no straight road leads from utilitarian epistomology to economic thinking. A great gap exists. As philosophers, the utilitarians based their philosophy of human understanding on induction and empiricism; as economists, they followed a method of deductive theory. Stephen, who somewhat sympathizes with the German historical school accuses the classicists, especially Ricardo, of "rash" dogmatism.

So Stephen cannot fit the classical economy completely into the utilitarian framework. The reasons are quite obvious today. Economic thinking is only partly shaped by utilitarianism. The theory of a general equilibrium is based on pre-utilitarian deism. The younger Mill is undoubtedly impressed by conservative and socialist criticism of modern industrialism, which has been acknowledged at least partly by Stephen himself. Generally Stephen adopts a viewpoint which is too narrow for a sufficient analysis of the philosophical understructure of classical economy. Despite that, the historian of economic thought ought to read this book. He will learn about many facts, documents and personalities that he will not find easily elsewhere.

E. KAUDER

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Outside Readings in Economics. By ARLEIGH P. HESS, JR., ROBERT E. GALLMAN, JOHN P. RICE, and CARL STERN. (New York: Thomas Y. Crowell Co. 1951. Pp. xiii, 877. $2.75.)

Beginning with the well-known essay on *The Scope and Method of Economics* by Oscar Lange and ending with a selection from Barbara Wootton's *Freedom Under Planning,* this collection of readings contains ninety-two articles covering the major topics studied in the elementary principles' courses. While in some cases one might question the inclusion of a specific article (a few seem rather technical and narrow in scope for the beginning student), in general the selections are excellent, the articles are of high quality, and a relatively good balance is maintained between opposing points of view. A majority of the articles are taken from contemporary sources as one might expect, but there are several appropriate selections from economic classics.

In content, about one-fourth of the book measured either by number of pages or by number of articles is to be found in two sections: one entitled "Money, Banking, and Price Levels," the other, "Income, Employment, and Business Cycles." Although there are separate sections on a variety of topics, no section is devoted primarily to labor problems or industrial relations. Consequently, the articles relating to labor appear in several sections, and the basic issues of labor organization and collective bargaining as a whole are not so well pointed up as they might be.

In general, the book is well planned and organized and can be adapted readily to any standard elementary text. The editors present a table correlating the Readings with four of the most widely used texts. In addition, the book is strengthened by headnotes, brief and to the point, orienting the student to the particular topic. Beyond this, the editors have shown admirable restraint in not making comments of their own. Useful also is the author index with short biographical notes (with a few biographies curiously omitted). Finally, the format is unusually good for a book at this price. The book should prove valuable to teachers who desire supplementary readings in the elementary course.

GERALD J. MATCHETT

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Price Determination: Business Practice versus Economic Theory. By W. J. EITEMAN. Michigan Bus. Repts., No. 16. (Ann Arbor: University of Michigan, School of Business Administration. 1949. Pp. ix, 98. $2.50; paper, $1.)

This book adds another chapter to the controversy on the usefulness of marginalism in economic theory. One can sympathize with Professor Eiteman's concern about the misuse of marginalism to explain the individual firm's actual decision-making process; but whether marginal analysis is entirely useless is quite a different subject, and it is none too clear that this difference is fully appreciated in this book. The general tenor of the book is that conventional theory is unrealistic and completely inadequate as a theory of price and output.

Eiteman approaches the problem of the determination of price and output from what he considers is the point of view of the businessman. The preoccupation of conventional theory with the revenue and expense accounts, he says, completely overlooks the businessman's great concern with the intensive utilization of working capital and with the nature of his balance sheet. Inventories, in his scheme of things, are viewed as a primary control mechanism. Furthermore, Eiteman says (Chapter 4), demand to the businessman is not a line but rather a zone of vagueness, and for this reason economists must discard certain hypothetical notions of which they are very fond, and discover new procedures of analysis that follow more realistic lines. The guiding principle should be to observe and describe business practice as it is, not as it would be under imaginary conditions.

The literature on this subject has made amply clear that the theory of the firm in terms of marginal analysis is not supposed to be an explanation of the decision-making processes in the firm; rather it is supposed to be an explanation of the conditions of profit maximization. In so far as businessmen succeed in maximizing profits (irrespective of their decision-making processes) they will arrive at the levels of price and output indicated by traditional theory. Marginal analysis does not claim that every businessman succeeds in maximizing his profit. It is probably true that those entrepreneurs who are inept at the game, and whose profits fall far below what could be obtained at optimum price and output levels, are eventually wiped out by those who by some method or other do manage to approximate the optimum position—the process is one of the survival of the fittest. Marginal analysis simply indicates the optimum; it says nothing about how businessmen do in reality make their decisions. This latter problem is of course also a very interesting one, one which should be explored in order to obtain a better understanding of the operation of our economic system. It should be clearly understood, however, that it is a related subject, not the same subject.

As an explanation of the price and output which is actually (as against ideally) reached by the firm, Eiteman's theory is somewhat perplexing. The businessman, he says, first considers what is a *reasonable* minimum use of his plant. After determining this, he finds the cost of production at this level of output and adds a *reasonable* return on the total investment required. This determines his price. He then proceeds to sell as much as he can at this price. The rise and fall in inventories indicates to him the level of output at which he should stabilize. This method of determination of price and output, Eiteman says, will result in a lower price and greater output than that indicated by traditional theory. (If this is true, of course, the producer could, if he only knew it, make more money by raising his price and contracting his output.)

Major objections must be raised to this explanation, even as a theory of decision-making in the firm. It is not complete, in the sense that it still leaves unexplained such factors as how the size of the plant is determined, how reasonable minimum use of the plant is determined, and how the reasonable return is decided. The theory depends upon these factors, and there is no reason to expect, in the absence of some answer to these questions, that in

fact price will be lower and output greater than the traditional optimum, as Eiteman claims. It is quite possible that the conservative tendencies of businessmen and their preference for fairly wide margins would lead to prices that were higher and outputs that were lower than those which would maximize profits. In other words, the questions of how businessmen actually do make their decisions and how the point at which they arrive compares with the point of maximum profit are still left unanswered.

RICHARD RUGGLES

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Economic History; National Economies

The Rise and Fall of Civilization—An Inquiry into the Relationship between Economic Development and Civilization. By SHEPARD B. CLOUGH. (New York: McGraw-Hill. 1951. Pp. xv, 291. $4.50.)

The aim of this book, explicitly indicated in its subtitle, is to elucidate how economic development affects the culture of peoples. In meeting this objective, Professor Clough succeeds in presenting an admirable short and succinct history of the socio-economic development of the ancient Mediterranean civilizations and the Western world building upon their cultural achievements. In form, selection of data, and clarity of presentation, it is a masterly performance, and its orientation in pointing up social and economic relations rather than political events and the rôle of military heroes is perhaps best exhibited by glancing through the entries in the useful index. A rough estimate of the proper names mentioned there, shows about six times as many artists, poets, philosophers, scientists and leaders in economic thought and practice as kings, emperors and political leaders. The book is written in simple, clear language and appears to be eminently useful as an introduction to the social and economic history of the West for the educated layman or the mature undergraduate student.

But in addition to being a successful digest of an important aspect of Western history the book purports to adduce evidence in confirmation of the hypothesis that economic surplus is a necessary condition of advances in civilization. This hypothesis is further extended by deriving from it the consequences that since economic activity presupposes rational action, the production of an economic surplus is associated with the congregation of intellectuals, and since its consumption presupposes a leisure class, advances in civilization are associated with the growth of urbanism. Further reasoning leads to the observation that purely artistic use of the economic surplus leads to unproductive investment (in economic terms) and that the prolongation over time of a high level of civilization requires a "nice balance in the utilization of human energies between aesthetic and economic activity" (p. 7). These theses are considered to be a refutation of the theories of history of Oswald Spengler, E. Huntington, and, above all, Arnold J. Toynbee.

There is no doubt that Professor Clough succeeds in showing the coincidence in time between periods of economic advancement and a flowering of the arts and philosophy. But this coincidence is left essentially unexplained.

It is admitted that apart from the economic surplus other factors, for example the controlling ideologies of a culture—and notably ideologies putting a high premium on freedom of action, expression, and thought—are of great importance. But no clear-cut theory of social change relating the development of these ideologies to forms of attaining an economic surplus is stated. In other words, although Professor Clough shows the simultaneous appearance of economic well-being and the attainment of a high level of civilization, he does not show in a convincing manner how and why they mutually influence one another. The statement can be found repeatedly that "the attainment of relatively high degrees of civilization . . . depends upon the range of opportunity for alternative decisions . . . [which] . . . is determined by the amount of economic surplus which permits of freedom from working exclusively to obtain the necessities of life" (pp. 258-59). This proposition certainly is intended to mean more than the oft-repeated vulgarization of Marxian historical materialism, that before men can engage in artistic and philosophical activity they must feed and clothe and house themselves. Professor Clough's theory is both wider and narrower than that of Marx. It is narrower in that it is only concerned with correlating economic welfare and the output of works of art and the mind in general, and the maintenance of security, without investigating the social relations dominating the distribution of goods and services between members of a society. It is wider in that it appears to imply a direct correlation between the level of advancement of a culture and the size of economic surplus. This conclusion is based on a definition of civilization which in part implies a value-statement, and in part involves circular reasoning. For Professor Clough says that "the greater the extent to which a people produces aesthetic and intellectual works of high merit and provides physical and social security for its members, the more civilized that people is" (p. 3). Now the judgment of the quality of aesthetic and intellectual productions implies a value judgment, and it would be difficult to say whether Greek art, or Gothic art or modern art takes the crown. As concerns the capacity of a society to assure physical and social security to its members, this is a direct function of its level and form of economic activity, and the determinant of civilization—economic surplus—becomes at the same time the consequence of civilization. For these reasons, the absence of a clear statement of functional relations—especially in the discussion of periods of cultural decline, where sometimes accidental factors are alluded to (for example the decline of Egypt after the Twelfth dynasty, or the decline of Spain in the Seventeenth century)—and the introduction of value judgments and circular reasoning, Professor Clough's account cannot be regarded as a full refutation of the theories of Toynbee or Spengler. His account only shows that the capacity of producing an economic surplus is a necessary (but not sufficient) condition of attaining a high level of civilization. Rather than stating a new theory of history, this work must be regarded as merely pointing to a fact that is often overlooked by historians as well as economists: the fact that there exist important demonstrable relationships between economic activity and the evolution of the arts and sciences.

BERT F. HOSELITZ

The University of Chicago

American Conservatism in the Age of Enterprise. By ROBERT GREEN MCCLOSKEY. (Cambridge: Harvard University Press. 1951. Pp. xi, 193. $6.00.)

Until recently it has been fashionable to characterize the decades of American development following the Civil War as the era of the "robber barons." A reaction to that stereotype has now set in as scholars more adequately assess the social and economic achievements of those years and the significance that they hold particularly for the conservative traditions of our own period. To this re-evaluation McCloskey's slim yet compactly written volume is a significant contribution and one to which economists will be in debt.

This study seeks to explore why the economic and social ideology shifted radically after the Civil War and why a philosophy of conservatism was developed during the last part of the nineteenth century so at variance with the Jeffersonian theory of democracy. For though the author admits that the doctrines of capitalism had made indelible impressions upon American society and thought before 1865, he maintains that human rights and values prevailed over property rights quite in contrast to the years that followed. In a somewhat unique approach McCloskey looks at the ideology of the post-bellum period through the life, work, and writings of three men: William Graham Sumner, the academician who legitimatized laissez-faire enterprise with a moral and social ethic; Stephen J. Field, the Supreme Court Justice who translated the mores of capitalism into the legal code; and Andrew Carnegie, the industrialist who, though not without some beliefs in the social responsibilities of industry, nevertheless successfully applied the individualistic philosophy of his time to business practices. The analysis thus cuts across several fields and affords the advantage of showing the interplay among moral values, legal traditions, and business ethics.

McCloskey reaches the conclusion that the triumph of conservatism after 1865 was a result of a "degeneration in the liberal democratic tradition." He finds that the humanitarian outlook and spiritual values associated with the nation's birth gave way to a philosophy of materialism and pseudoscientific belief. Doctrines of man's equality faded as society measured progress in terms of the accumulation of property and the "survival of the fittest." The transition that took place was, for example, particularly well reflected by the life of Sumner himself who cast out his early religious heritage and then proceeded to fill the void with a philosophy of social Darwinism and economic enterprise that led directly to the enshrinement of the worst features of the capitalistic system. With this frame of reference, as the author points out, the late nineteenth century saw no need for reviewing the standards of the economic order in terms of public welfare. Capitalism was simply looked upon as democracy's best servant irrespective of its evils, and any public interference with private enterprise became a threat to the democratic way of life.

It is extremely unfortunate that the majestic development of American industry and commerce that took place after the Civil War had to be completely enshrouded in an ethics that were at variance with some of the principles of democracy. The author notes that confusions of the democratic tra-

dition which originated in this era "have survived to clog the channels of public policy ever since." We know now that a crass materialistic philosophy is not indispensable to industrial progress. Today we are confronted with the urgent task of sorting out and retaining what is worthwhile of the conservative tradition. McCloskey's scholarly analysis prepares much of the groundwork for this undertaking.

Ernest A. Engelbert

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Prices and Inflation during the American Revolution, Pennsylvania 1770-1790. By A. Bezanson, assisted by B. Daley, M. C. Denison, and M. Hussey. Wharton School of Finance and Commerce, Indus. Research Dept. Research Stud. XXXV. (Philadelphia: University of Pennsylvania Press. 1951. Pp. xvi, 362. $6.75.)

To report on a book like the one under review is a difficult task, especially if the reviewer does not belong to the small number of specialists in the field of price history. It is, of course, entirely impossible for him to check critically on individual time series, and all he can hope to do is point to the publication and give the background information needed by potential users.

The author of the book, now professor emeritus of the University of Pennsylvania, once a student of Edwin F. Gay, is one of the outstanding members of the older generation of American economic historians and possesses an enviable reputation for accuracy. She has been working in the field of price history for about two decades, earlier books having been published on *Prices in Colonial Pennsylvania* [1720-1775] (Philadelphia, 1935) and *Wholesale Prices in Philadelphia 1784-1861* (Philadelphia, 1937). In the introduction of one of the older volumes the author pointed to the goal of the studies: Besides providing information on the development of prices in a restricted, though important, area she aimed at explaining the internal and external causes of such price fluctuations as took place and at describing contemporary customs of trade, so that the research shed light on earlier phases of American life. Finally, the studies were meant to assist such scholars as were working on an analysis of economic development during the periods under observation.

As can readily be seen, the earlier works left a gap for the years 1776-1783 which has been filled by the book under review. Price history is a formidable task at all events, but it becomes especially so if one deals with a period of currency derangement. It is not surprising therefore that the years of the Revolutionary War were the last to be tackled. To be sure, there is some overlapping with the studies covering the earlier and later periods, necessitated by the task of providing a rounded-out picture of the inflation. In the earlier books the source for the primary price data (wholesale quotations of certain domestic and foreign staple commodities) had been price lists published in newspapers or in market reports. Such material was not available for the Revolutionary period and price data had to be gleaned from contemporary account books and the letters of merchants. Whoever has had experience with such sources, as the reviewer has, can appreciate the magni-

tude and the difficulty of the job. Nevertheless, the author and her cooperators succeeded in collecting material for fifteen complete commodity series and ten series which could be used, but are less complete. The next task was that of correcting the commodity price series for depreciation of what was then called "congress money," which necessitated the study of the purchasing power of competing currencies in "exasperating detail." Such correction was made at the time of the Revolutionary War by the merchants themselves by converting the prices posted in continental currency by a coefficient assumed to represent its specie value. As Miss Bezanson informs us, from a certain moment on the merchants' correspondence contained regularly the price relation of specie to paper as the most worthwhile piece of information. That relation was the basis on which trade was conducted and accounts balanced; and its use antedated the adoption of legal scales. In addition, the author has calculated two more measures, one based on direct exchanges of specie for continental currency, the other on commodity transactions in specie. As the result, the reader will find charts showing both the general course of prices and the development of prices adjusted to specie equivalent. On top of that, as in the earlier volumes, he is given rich information on the prices of those commodities which went into the making of the general indices.

It may be pointed out in passing that Miss Bezanson's studies belong to those price historical investigations which were sponsored by the International Scientific Committee on Price History, created in 1930 on the suggestion of Sir William Beveridge and Professor Edwin F. Gay. That project produced more or less extensive studies on price history in Austria, France, England, Holland, Germany, Poland, Spain, and the United States. It was, in addition to that of Miss Bezanson, under the care of such men as Sir William Beveridge, Alfred Francis Pribram, Henry Hauser, M. J. Elsas, Nikolaus W. Posthumus, Franciszek Bujak, Earl J. Hamilton, Arthur H. Cole, and G. F. Warren and F. A. Pierson.

FRITZ REDLICH

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Statistics and Econometrics

Expectation in Economics. By G. L. S. SHACKLE. (Cambridge: The University Press. 1949. Pp. x, 146.)

This short book presents an original formulation of the problem of choice under conditions of uncertainty (Chap. II). This new method is applied to some very interesting and knotty problems: The problem of investment decisions—an area which has occupied Shackle before in a series of articles—is first examined (Chap. III). An intriguing section on the speculative holding of assets constitutes the second attempt to apply the method (Chap. IV). The last two applications are the taxation-incentive problem, and the problem of bilateral monopoly (Chaps. V and VI). Finally, one of the most provocative parts of the book presents Shackle's critique of the orthodox solution to the problem of uncertainty (Chaps. I and VII).

The traditional means of dealing with the problem of uncertainty by economists is either to "correct" their results by discounting those obtained with the assumption of certainty, or to account for otherwise unexplained patterns (such as the purchase of insurance policies) as an explicit deviation from behavior with uncertainty. Marshall, Fisher, and Knight used both means. Lange increased the precision of the correction by an "uncertainty-equivalent." Its inadequacy was shown by Hart who argued that Lange omitted the qualitative response to uncertainty. The continued development of the problem by Marshak, Tintner, Musgrave, Domar and others has been within the traditional mold in the basic matter of using the theory of probability as the foundation of the problem. Shackle removes himself from this tradition by rejecting the probability approach to uncertainty.

The method itself is radically different from any other attempt to account for the effects of uncertainty. A decision involves a choice between uncertain alternatives. Therefore, each alternative is thought of as having a number of possible outcomes. These can be ordered from the least to the most pleasant. Associated with each of the possible outcomes is a "degree of potential surprise." That is, each outcome will be expected to occur with some degree of belief, hence the occurrence of some unexpected outcomes would elicit a high degree of surprise. The greater the capacity to surprise, the less is the enjoyment of the outcome in contemplation. The pattern which is likely between the values of the outcomes and the surprise (potential surprise function) is such that the more extreme the outcomes contemplated, the greater the degree of potential surprise. But there will be some "inner range" which has zero potential surprise. The stimulation derived from contemplating this inner range is, thus, not marred by the fact that the occurrence of any one of the outcomes would be surprising. Beyond this range two opposed tendencies develop. The more extreme the outcomes considered the more the positive stimulation, while at the same time the greater becomes the potential surprise which tends to reduce the stimulation. There will be some point beyond the inner range where the stimulation will reach a maximum as the depressing surprise force finally outweighs the ever-increasing stimulation from more advantageous outcomes. This maximum in the stimulation function is important because it is presumed to be the point of greatest psychological attention. It is assumed, in fact, that the entire interest fixes on the maximum point because the pleasure derived from the contemplation of the outcome of a choice is not additive and therefore nothing subjective is affected by considering values of other outcomes than the greatest. This outcome is called for this reason the "focus-outcome." A comparable outcome may be found on the unpleasant side of the outcome range, called the lower focus-outcome (or focus-loss where money gains and losses are involved). It is upon these two values that the choice among alternatives is based.

It is a simple matter after having developed the idea of these "primary focus-values" to transform them to "standardized focus values" by finding values with the same capacity for stimulation but which do not have any potential surprise attached to them. These then are useful for purposes of comparison and choice among alternatives. The final step in this process is

taken with the aid of a kind of indifference map expressing the taste for risk. Curves are drawn connecting strings of indifferent pairs of focus-values, thereby a set of gambler indifference curves is obtained. By considering alternatives within this nexus the basis of choice is explained.

This apparatus is no simple modification of the orthodox method of analyzing uncertain choices; why does Shackle consider it necessary? The orthodox method, one way or another, relies on the theory of probability. It is Shackle's contention that the theory of probability does not apply to a large number of economic decisions for two reasons. (1) Such decisions must be made on the basis of information of very few prior cases, whereas a probability statement is obtained by finding relative frequencies over a large number of cases. (2) Many of the most important economic decisions are made only once, for the decision itself alters the conditions under which the opportunity is present. Probability statements, however, are statements of tendency in the long run of events and cannot be taken to apply at all to single events. Either Shackle's scheme or some other radical departure seems to be necessary if we are to understand this very large and important class of decisions.

Although Shackle's case is persuasive, I do not believe it is correct. I shall only suggest the grounds on which I disagree. (1) Shackle exaggerates the extent to which, *e.g.*, investment decisions do not have previous evidence which is relevant to them. The success of such an investment frequently depends upon the outcome of a chain of separate events; evidence about these subevents may be readily available. (2) The lack of precision in determining probability judgments should not be confused with the inability in principle of making such judgments. I feel that part of the appeal Shackle's case has may be due to this confusion. (3) The most unfortunate oversight is to have completely disregarded the concept of logical probability which in its most modern form has been developed by R. Carnap. Of the two concepts of probability the one based on relative frequency—the concept Shackle considers—requires large uniform classes of data in order to be meaningful. But Carnap's "degree of confirmation" (logical probability) is able to express the probability of an hypothesis on the basis of given evidence regardless of how "inadequate" it may be. In fact, it may be thought of as an "estimate" of probability in the relative frequency sense. Probability is applicable to economic decisions even though the situations are unusual. (4) The concept of the "posit" was developed by Reichenbach to establish probability judgments as the basis for rational behavior in actions which are nonrecurrent. A posit is a weight of likelihood given to a single event which is based on the "probability" of the event. Then, to act on the basis of the posit is to maximize the chance of being correct in the greatest number of different cases in the long run. Thus, despite the non-recurrence of the event, the logic of probability does provide a guide to rational behavior. For these reasons Shackle's scheme must be considered in open competition with the orthodox methods and it will therefore have to be judged on its own contributions.

What are the achievements offered by Shackle? 1. The first application of the new method is to the effect on investment decisions of changes in the structure of expectations. The effect, for example, of the occurrence of some expected event such as a presidential election "may [be to] release a large

number of investment-decisions" (p. 73). This is because "the strength of the tendency for investment to be discouraged will continually increase as the event draws nearer and then jump discontinuously to zero at the moment when the event has just occurred" (p. 73). It is also discovered that an asymmetry exists between events which encourage and those which discourage investments. This is because depressing information must be assimilated by a structural revision of expectations while stimulating information can be added to an existing structure of information. The most striking part of this analysis is the detailed consideration of the effect on expectations of the occurrence of new events.

2. In a certain world each speculator will hold *that* good which he expects to have the greatest price rise in some given time-period. In the uncertain world more than one good is commonly held. This is explained in Shackle's scheme by showing how a mixture of two assets will provide a "most desired" combination of focus-gain and loss, located on the gambler indifference map. This accomplishment is less appealing when we discover that in order to account for the holding of any combination of more than two goods it is necessary to introduce new assumptions which are unrelated to Shackle's scheme. With orthodox devices one might choose to hold *the* asset which has the greatest mathematically expected rise in price. But the more broadly the probability calculation is applied, the better are the chances of success. Therefore, *ceteris paribus* many goods will be held for speculation simultaneously. Orthodox probability explains the behavior of investors without extra assumptions required by Shackle.

An explanation of the extreme sensitivity of speculators' holdings to events which in themselves are not of great importance is developed. This sensitivity is due to the assumed shape of the gambler's indifference curves. The evidence offered for such a function is not conclusive and it does not take into consideration the kind of evidence that has been employed in recent work on the response to risk. The gambler indifference map, however, does provide a useful form for such problems. Its use requires that the alternative being considered be "represented" by two variables one of which may be taken as the chance of gain and the other as the chance of loss which is paired with the uncertain gain. The Domar-Musgrave development in uncertainty, which involves splitting the mathematical expectation into its positive and negative components, is adaptable to the gambler's indifference map. It is the latter which yields the results in most cases and they can be had without taking the burdensome non-probabilistic scheme with it.

3. One of Shackle's most ingenious devices is to tax investors' profits without thereby reducing the incentive to invest. This feat is to be accomplished by requiring a declaration of expected profit (the declarer's interests will be served by declaring his focus-gain) and only taxing actual profits to the extent that they deviate from the declared value. Presumably, then, the basis on which investment decisions would be made in the absence of taxation will not be disturbed by the tax. Of all the interesting questions one might ask about such an idea, the only relevant one is: will it *not* actually reduce incentives?

The answer depends upon whether the possibility of making some gain

other than the focus-gain is of no interest to the investor so long as the focus-gain remains. For example, would an investor be indifferent between this scheme with a tax of 10 per cent on the deviation of actual from declared profit and with a tax of 100 per cent? This may be a good device for more modest reasons but it hardly seems like a *coup* for the focus-value method.

4. Bilateral monopoly is the last nut put into the cracker. The problem is, how can the indeterminate solution arrived at by means of subjective valuation theory be improved upon? Since the process of bargaining involves uncertainty, it may be analyzed by means of focus-values. Alternative strategies are considered. For some, the focus-loss (due to loss of face in having to come down, converted into a spot cash basis—conversion depending upon the extent of damage to reputation and the importance of same) will not seem worth the focus-gain (a receipt over some reasonable expectation) on the gambler indifference map. Another of the strategies may be more attractive. In any case, knowing the tastes and expectations of the bargainers, a conceptually determinate solution may be obtained. The drawing apart of the strands of considerations here is rather impressive but it is not much different in the method of separating cost and gain from Hicks' observations on the bargaining process. On the other hand, it lacks the richness in the content of response that is to be found in the theory of games. One is bound to be inhibited in making assumptions about a psychological process such as Shackle is describing, whereas operating in the context of a rational model seems to release those inhibitions. Where bargaining is carried on with skill by professionals, rational models seem more appropriate than constructs of mental activity.

No final judgment seems appropriate about all that Shackle raises in this fascinating book. I am most optimistic about the gambler indifference map; of all the devices *it* has, for me, the most value for the least degree of potential surprise. For all that can be said which is critical, it is on the whole a tremendously able job of exposition, full of new ideas and suggestive of a vast array of problems in a complex area.

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Activity Analysis of Production and Allocation. Edited by TJALLING C. KOOPMANS. Cowles Commission Monograph Number 13. (New York: John Wiley and Sons. 1951. Pp. xiv, 404. $4.50.)

Like all things good for body and soul, this book is going to hurt. Nevertheless, there is no escaping the fact that everyone seriously interested in economic theory ought to keep a stiff upper lip and attempt to read it. This will be no easy task, since mathematical concepts whose use in economics is relatively new abound; the economist with some acquaintance with modern algebra will find the going sticky, and the far greater number with no mathematics or with just some calculus notions will find some of the chapters literally impossible. Still, by careful selection and constant attention to the *economics* of what is being said, almost everyone can profit.

It must be said at once that many of the general economic results stated

in the book are not new; they are, in other forms, already part of the literature of welfare economics and the theory of production. What the new methods offer are first, a clearer insight into the meaning of some established propositions, such as those concerned with the much more than institutional significance of a set of price ratios in the optimal allocations of resources, and second, a framework for formulating many kinds of optimum-problems in such a way that they lend themselves to systematic computation.

As with all anthologies the reviewer and the reader face the problem of unifying the various contributions. In this case Koopmans' Introduction will be of some help, as it places the papers in both abstract and historical perspective. He describes them as being "devoted, directly or indirectly, to various aspects of a fundamental problem of normative economics; the best allocation of limited means toward desired ends." This is perhaps a little narrow; there is unity also on a descriptive level. This is linear economics—commodities are transformed into each other at constant returns to scale.

Leontief input-output models. The simplest linear model of production is the now well-known input-output system of Leontief which has a growing literature and is discussed in five papers in this volume. Harlan Smith gives a brief summary of the structure and uses of the open-end Leontief system, *i.e.*, one in which "labor" is thought of as a primary, unproduced factor of production, and consumption is treated as unexplained "final demand." Professor Georgescu-Roegen states some of the deeper properties of a considerably generalized version of the model.

In the input-output system, the traditional production function can be replaced by the notion of an industry or activity. An activity is a process which uses up some commodities as inputs and produces one commodity as output, in fixed proportions. Subject only to the limitation that the needed inputs are available, an activity can be expanded or contracted indefinitely with fixed proportions and constant returns to scale. Note that joint production is excluded in the simplest system—no activity can have two outputs—and there is only one activity producing each commodity. The latter restriction, however, turns out to be only apparent. Three short papers in the volume are devoted to a remarkable theorem due to Samuelson and Georgescu-Roegen, which states: in a competitive world even if there were alternative activities for the various products, only one activity for each product could ever be observed. The market would exclude all others. A more exact way of saying this is that among all possible activities for a particular product there is one which will be optimal for *all* possible final demands, and the final demands are the only arbitrarily changeable element in an input-output system. The bearing of this theorem is not to be exaggerated, however. It holds only (1) when joint products are excluded, and (2) there is only one primary input. Samuelson abstracts his theorem and sketches a proof: Koopmans gives a formal proof for the three-commodity case; and Arrow proves the theorem generally. A careful reader of Arrow's paper should be able to work out a two-commodity diagrammatic version which will make the proposition intuitive.

More general models: Airforce and others. The idea of an activity need not be restricted to production processes in the narrow way usual in the

economic theory of production. All that is required is that the activity be capable of indefinite expansion or contraction at constant returns. One of the most fruitful sources of ideas in linear models has been the work carried on at the Air Force by George Dantzig, Marshall Wood, and others. The problem faced there is the scheduling and programming of the manifold training, supply, and operational activities which make up the Air Force, including activities extending over several time periods. Some of these are immensely detailed, others quite aggregative. Overlaying these more descriptive analyses are problems involving the allocation of the limited resources at the disposal of the Air Force among competing activities. These normative or "welfare" problems will be discussed shortly. The point here is that the activities studies by the Air Force include such complex processes as "Flying the (Berlin) Airlift," "Constructing Runways in Berlin," and "Training of Bomber Wing." Four papers in this volume describe with varying degrees of generality the kind of work that has been done under this heading, and these are among the most accessible in the book. It should be mentioned that what has been described so far is *not* properly speaking "linear programming." Dantzig's pioneer contributions to this rather inappropriately nicknamed field will be discussed later.

Within the input-output model of production there is, as we have seen, no room for optimizing behavior. But as soon as the unrealistic limitations of the absence of joint production and the existence of only one primary factor are removed, the situation changes. An activity may have many inputs and many outputs, and there are many ways of producing a specified menu of final demand within the availability limitations on primary factors. Models of this kind were first systematically discussed in a celebrated paper of von Neumann's, since translated into English.[1] They are discussed in the present volume in a long paper by Koopmans and one by Georgescu-Roegen. Everyone should read the first section of Koopmans' paper, which gives his definitions and a short summary of results. From there on the going gets tough and the reader unequipped with a lot of modern algebra and/or a marvelous geometrical intuition will soon peter out. Georgescu's paper is also deep and important and will, I think, be readable to most students of economic theory. Georgescu keeps the standard economics of production close to the surface, and this lends an air of familiarity to his mathematics. The points of view of these two papers are different and complementary. Georgescu remains close to the original descriptive formulation of von Neumann; he is interested in how a certain abstract economic system can behave. In order to study this question postulates are made with definite economic-behavior content; primarily that entrepreneurs maximize profit and that competition acts to make profits zero and interest cost a minimum. Under these assumptions it is shown that the economic system described is consistent, *i.e.*, an equilibrium —or steady-growth—state exists. Georgescu provides alternative proofs of von Neumann's basic results.

Koopmans, on the other hand, remains within the sphere of static production. Primary factors are available in certain quantities, and final demands

[1] "A model of General Economic Equilibrium," *Rev. Econ. Studies*, Vol. 13 (1945-6), pp. 1-9.

are specified. Given the technology, that is the collection of activities or production functions, production consists of operating each activity at a non-negative level. Interest attaches first to the possible production patterns, those which can be achieved with the given technology, and more specifically to the "attainable" production patterns which also meet the availability restrictions on primary factors, yield non-negative amounts of final commodities and zero net amounts of non-desired intermediate commodities. The possibility and, in fact, need for optimization is introduced by specifying the obvious efficiency objective for the production of desired commodities, namely that *it should not be possible to produce more of one desired commodity without reducing the output of another:* Koopmans' main object of study is the set of efficient production patterns, satisfying this usual economic requirement. Note that no markets or other exchange activities have been introduced. But Koopmans shows that the concept of a price system is already implicit in this abstract model of production. The efficient patterns of production can be *characterized* as those for which there exists a set of positive prices such that no activity in the technology permits a positive profit and such that all activities actually operated at a positive level yield zero profits.

Thus we are back to the von Neumann-Georgescu postulates, but these are now seen to have more than institutional significance. They are inseparable from the notion of productive efficiency. It is also shown that the price ratios defined by an efficient production pattern are in fact equal to the corresponding marginal rates of substitution if the latter exist. This theorem is of immense significance for welfare economics, and for the possibility of a decentralized mechanism of economic planning.

An excellent introduction to this model of production is provided by a paper by Hildreth and Reiter which applies the theory to the choice of the best among several alternative crop-rotation plans.

Linear programming theory. So far the theory of production has been built upon a weak criterion of productive efficiency, and its result is the singling out of a perhaps quite extensive set of efficient production patterns. Can the narrowing-down process be carried further? The theory of the firm, of course, treats efficient production as a halfway house on the way to maximization of money profit. And this leads us to linear programming proper.

Maximization problems in economics terminate in the theorems of marginal analysis. But surely it is an indirect procedure to characterize the top of a hill by the vanishing of first partial derivatives and the negative definiteness of quadratic forms. Such an approach has the additional disadvantages, first, that some hills don't have even first derivatives, and second, that when the method applies, it yields only local properties and must be accompanied by the warning that somewhere there may be a taller hill. Linear programming takes the more intuitive view that the top of a hill is a point from which a step in any direction is a movement downhill, and it looks for global maxima. We may define linear programming as the maximization of linear functions subject to linear inequalities. This is appropriate in many economic problems[2]

[2] Problems like utility-maximization where the maximand is not linear can also be handled by an extension of the theory due to Kuhn and Tucker, but not described in this book. Even here the budgetary constraint is a linear inequality.

where the function to be maximized is indeed linear, a sum of competitive prices times quantities. And in the activity-analysis model of production the constraints, or production possibilities, are linear inequalities. The new methods do not fail when the usual differentiability conditions are not met. The mathematical roots of linear programming go back a long way; the theory in its present form is substantially due to George Dantzig of the Air Force, and has been developed by such mathematicians as Tucker and his co-workers, and G. W. Brown, and by the economists Dorfman, Koopmans, and Samuelson.

Linear programming has from its inception been strongly oriented toward the provision of efficient computational methods. This is discussed in the present volume by Dantzig, Brown, Dorfman and Koopmans. Dantzig provides a numerical solution of a classic linear programming problem—the efficient carrying out of a steady transportation program involving movements among several ports. This problem is also analyzed in detail by Koopmans and Reiter in another paper. It is remarkable that the mathematics of linear programming, although complicated, is strictly speaking elementary, and requires nothing comparable with the backlog of limiting processes which underlies the calculus of many variables.

Applications of linear programming to standard economic problems are currently growing in number and several interesting ones have already appeared or will shortly appear in the periodical literature. An already classic example is the Cornfield-Stigler minimum-cost diet problem. Various foods can be bought at constant prices, and a unit of each food provides a certain amount of each of several dietary requirements. Thus the total amount of each nutrient is a linear sum of the quantities of the various foods consumed. Subject to the restriction that at least a standard amount of nutrient be acquired, the problem is to choose the diet to have the least possible cost. This problem has been given complete numerical solutions.

Study of problems like this has given rise to the concept of a "dual" problem, discussed here in a mathematical but not overly dense paper by Gale, Kuhn, and Tucker. The duality concept will prove to be of importance in economic theory. Associated with each linear-programming maximum problem is a twin minimization problem, in which the coefficients appearing in the first problem switch places. For example, the dual to the diet problem is to find a way of imputing "shadow-values" to the various nutrients in such a way that the total nutrient-value acquired is a maximum subject to the restriction that the total nutrient-value contained in a food shall not exceed the price of a unit of the food. In economic problems, prices and quantities often turn out to be dual variables. The usefulness of this formulation is essentially that the minimum achievable cost and the maximum achievable imputed value always turn out to be the same, and that when one problem of a dual pair has been solved, the other becomes trivial. Since one of a dual pair is often an easier computational problem, this is a useful result. Often also the economics of a problem can be laid bare by going over to its dual.

This by no means exhausts the wealth of interesting material to be found in the book. Two papers discuss the (purely formal) resemblance between

linear programming and the theory of two-person zero-sum games. A long paper by Gerstenhaber develops the mathematical theory of convex polyhedral cones, in terms of which much of the Koopmans analysis is couched. This bristles with difficulties for the inexpert. Gale, however, goes over some of the same ground, everywhere showing the relationship between the language of cones and that of matrices and linear transformations. The growing number of economists with some facility in the latter field will find this paper a useful and readable introduction to the new methods.

In sum, the subject matter of this anthology is one of the frontiers of detailed and aggregative economic theory. It deserves a serious try. For those who try and fail, there remains the good news that a book[3] by Robert Dorfman is now, and one by Paul Samuelson will soon be, available, the former applying linear programming to the theory of the firm, and the latter attempting with a lighter mathematical budget to bridge the gap between the received theory and the newer methods of linear economics in all its manifold forms.

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[3] *Application of Linear Programming to the Theory of the Firm* (University of California Press, Berkeley).

Economic Systems; Planning and Reform; Co-operation

American Capitalism: the Concept of Countervailing Power. By J. K. Galbraith. (Boston: Houghton Mifflin. 1952. Pp. xi, 217. $3.00.)

Professor Galbraith brings to a discussion of economic organization and policy a remarkable breadth of experience. To this he adds a highly untrammeled outlook and incisive analytical powers. In this book these qualities are brought into effective play in a manner at once polemical and good-humored. They are not, perhaps, brought quite to full flower, since he has elected to write a book primarily for a non-professional audience. This involves a considerable over-simplification and some blurring of the finer shades of his thinking. But the outlines are clear enough and deserve the careful attention of his professional colleagues.

Roughly half the book is devoted to matters of industrial organization, the attitudes which have dominated antitrust policy, and a statement of a revised approach to policy. The approach thus devised is then brought into contact with public policies affecting particular groups, particularly labor and farm groups, and with stabilization policies. The outcome is therefore the outline of a consistent body of policy across a wide range of economic affairs.

To Professor Galbraith, the basic shortcoming of the thinking of economists on antitrust policy is an archaic devotion to a competitive ideal. In characterizing the views of his professional colleagues, his manner is one of rather graciously condescending derogation. His point of departure is, indeed, a caricature of "liberal" economic thought comparable to Keynes' opening caricature of "classical" economics. It is not a very nice tactic and does in-

justice to much searching thought prior to his own. It does nevertheless permit him to bring to sharp issue some troublesome aspects of current thinking upon the monopoly problem.

The central factual part of the problem is the actual structure of American industry. Over a very wide range there has developed a high degree of concentration, in the form of oligopoly where two or three or a very few enterprises engross a substantial major fraction of their markets and exercise "power." Since the competitive ideal presents a picture of an economy where social efficiency is achieved without the existence of such power, those who entertain this ideal in part seek to fragment industry, and in part lament the impossibility of doing so. The psychological result is an apprehensive view of the future prospects of the economy in spite of patent evidences of good performance. The dominance of the competitive ideal also creates ambivalent attitudes in the business community where, while power is exercised, the existence of power must be denied.

This approach to policy, in Professor Galbraith's view, represents an intellectual lag—a failure to see why, given its present structure, the American economy does in fact produce fairly acceptable results. On this point, he feels that "modern" theory has greatly overstated the similarity between oligopoly and monopoly. The present degree of concentration has not removed the incentives to technological progress; and, indeed, provides them with a highly favorable climate. Moreover, the greatly diminished force of price competition is not an irreparable or highly alarming development. For, in so far as "original" power positions are built up, there is an almost automatic growth of "countervailing" power which operates in the public interest. The waning force of competition *on the same side of the market* is replaced by the growth of countervailing power on the *opposite* side. This is the central thesis of the book.

The thesis is not used to derogate the usefulness of an antitrust policy. Professor Galbraith does not entertain an NRA or cartel philosophy. On the contrary, he believes in the maintenance of useful rivalries and favors limitations upon the excessive growth of "original" power, especially by collusive action. But he feels strongly that due attention to his distinction will lead to a more discriminating intelligence in the application of policy. Attacks upon countervailing power positions, as for example in the A & P case, seem to him quite asinine, especially where they do not touch the sources of original power.

There are, however, limitations upon the effectiveness of countervailing power as a social instrumentality. It is not equally effective in all markets, with unfortunate distributive consequences. To this fact Professor Galbraith attributes the recourse to government by especially disadvantaged groups. In these terms he builds up a reasoned defense of government intervention in behalf of labor and farm groups. The positive use of powers of government thus becomes an essential element in the satisfactory performance of the economy, and much of the curse is removed from the activities of "pressure groups."

All this, so far as it goes, expresses an inherent optimism concerning the prospects of the American economy. Power positions are largely neutralized

or directed to socially acceptable ends. In so far as this is not so, the opulence of the economy prevents them from creating intolerable injustices or social tensions. There is no perfection in the system, as there is supposed to be in a competitive model. But at the same time it is a workable system, to which no feasible or acceptable alternative is provided by recourse to "competition" or "planning."

This is a very powerful argument. But it is still partial, and based on premises not yet fully disclosed. One must therefore continue to the end of the argument, and beyond.

To Professor Galbraith, the peacetime environment which he believes to be normal, and to which the argument is fully applicable, is one in which recessionary tendencies maintain a moderate dominance. It is this fact which keeps the two sides of the market in opposition and maintains the forces of countervailing power in active and beneficial command. At the same time this less-than-full-employment tendency creates social problems of its own and he is therefore driven to explore the potentialities of a Keynesian sufficiently-full-employment policy. On this point he arrives at a similarly optimistic conclusion that "there are no problems on the side of depression or deflation with which the American economy and polity cannot, if it must, contend" (p. 193). To the technical possibilities are added the political pressures with respect to taxation and income maintenance which operate in the right direction.

The only serious problems to which there are no obvious solutions are, for Professor Galbraith, those connected with a state of inflationary pressures induced by mobilization and war. In these circumstances, the fiscal and monetary powers cannot be fully utilized without creating unemployment at a time when this result is peculiarly anathema. At the same time popular political pressures run counter to the adequate use of these powers. In these inflationary circumstances, countervailing power loses its force and joins with original power in creating a cumulative inflationary process. Professor Galbraith is certain that direct controls need to be added to firm use of fiscal and monetary measures. But his optimism recedes, and he ends on the note that, if long continued, "inflationary tensions are capable of bringing a major revision in the character and constitution of American capitalism" (p. 208).

To all these interlaced topics Professor Galbraith brings a mature thoughtfulness which commands respect. He requires the re-examination of their preconceptions on the part of those who may disagree from point to point. The result should be to narrow, rather than broaden, the area of disagreement, which must have been some part of his intent.

Nevertheless, there are points upon which one may feel misgivings. This is especially true of his great emphasis upon "countervailing power" as a *substitute* for "competition." Here he appears to fall into a trap of his own making, that of contrasting countervailing power with the "powerless" competition of theoretical models. In consequence he nowhere pays attention to the extent and force of the "real" competitive elements and the necessity of retaining them unless we are to embark upon a radically revised version of American capitalism. If the balance were held true on this point, and if the consequences for antitrust were more carefully spelled out, the remainder of

his argument would be so much the more telling. For there can be few "liberals" left who find a comprehensive solution in trust-busting. Much of the problem is that of finding the best terms upon which we can live with our industrial system in approximately its present form. Professor Galbraith has given us earlier versions of his acceptance of oligopoly[1] and up to a point there is much sense in it. The present version merely provides a clearer view of the saving graces. It provides a rationale for *not* doing certain things in antitrust enforcement. But it leaves an extremely blurred view of what the task of antitrust is.

At another level, there is a certain ambivalence in Professor Galbraith's interpretation of the performance of the American economy in the postwar years. This performance is his evidence for the operational merits of the system. But the period was one of inflationary pressures up to 1949 which appear to have been kept in check as much by a holdover of the "depression psychosis" as by any overt policies of government. This he appears at times to recognize; and to that extent the fact of a mild depression in 1949 with a quick recovery provides very fragile evidence of the quality of performance to be expected with a full "outbreak" of peace. Beyond this his easy faith in the effectiveness of Keynesian remedies for "recession" smooths over a rough terrain. He may well be right—I should think him right—that the country need suffer no recurrence of the experience of the great depression. But perhaps a more tempered optimism would be in order.

In one final respect Professor Galbraith simplifies his task by limiting it. He presents, except for war and inflation, a world of fixed relations and predictable tendencies. After expunging some archaic ideas from people's minds, policy can be intelligently adjusted to those, on the whole, beneficent relations and tendencies. This is not necessarily an idle faith. But it implies the possibility of constraining, in a widely acceptable economic theology, the play of forces now loose in the world which might re-allocate the whole balance of power, in unpredictable ways.

At an early point in the book, he states, "Man cannot live without an economic theology—without some rationalization of the abstract and seemingly inchoate arrangements which provide him with livelihood" (p. 18). His own revision of earlier doctrine, containing new means of grace, is given its own grounds of acceptability by the following tenets: we are opulent; we have the means to retain and augment this opulence; increasingly opulent societies are increasingly conservative. This is an interesting "theory of development" for America, but not necessarily an adequate one. It seems to me that Professor Galbraith might—in another context, for another audience, or upon further thought—find questions where he now states doctrines.

One cannot close without giving thanks for a profoundly satisfactory style, easy, lucid, witty, yet compact as befits the compactness of his mental processes.

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[1] For example, in "Monopoly and the Concentration of Economic Power," in Howard Ellis, editor, *A Survey of Contemporary Economics* (Philadelphia, Blakiston, 1948).

Modern Capitalism and Economic Progress. By THOMAS WILSON. (New York and London: Macmillan. 1950. Pp. vii, 274. $2.50.)

Mr. Wilson (University College, Oxford) has written a thoughtful book. Perhaps he has written two books, or at least a book with two distinguishable themes which appear over and over again as the argument proceeds. This is not to suggest that the two themes are inharmonious; quite the contrary. But the themes are separable and perhaps the one does not necessarily require the other.

The author's first theme is essentially a re-examination of the alleged weaknesses and deficiencies of "modern capitalism"—especially as exemplified by the contemporary British economy—and a weighing of the prospects or probabilities that these are more likely to be put right by socialist planning or by a refurbished system of firms, markets and prices. This theme ostensibly dominates the book from Chapter 2 through Chapter 12.

The method of treatment is to restate the economic problem in Lionel Robbins' terms and to show, both by *a priori* reasoning and by the facts of British experience, that the case for planning is relatively weak (Chaps. 2-5). But he realizes that this alone will not satisfy the doubting Thomases because the bill of particulars against modern capitalism includes items such as Inequality of Income and Wealth; Monopoly and Industrial Efficiency; Inflation; Mass Unemployment; and Balance of Payments Problems for which he must show the logical merits of the capitalistic solution as against that in prospect under central planning. Mr. Wilson's discussion of these problems is tidy, neat and thoroughly readable. In the main his mode of attack is to show either that the facts of the problem are quite other than the intelligent layman has been led to believe by the parties of the left—as in the case of inequalities in income and wealth, monopoly, comparative economic progress under Capitalism and Socialism or Russian Communism—or to show that the problems are made more intractable by Socialist convictions and the policies they engender. As might be expected the author concedes that reformed capitalism will have to give special attention to the problem of mass unemployment without interpreting full employment to mean guaranteeing everyone life-time security in his particular niche.

If economists find little that is either new or startling in all this, they will yet be grateful to Mr. Wilson for having set forth the argument and analysis so clearly and concisely. Perhaps economists have done far too little of this sort of thing in recent years apart from their regular university lectures. They seem to have assumed that the merits and achievements of capitalism were either self-evident or common knowledge, or both. Yet it is remarkable indeed —as Mr. Wilson is at pains to emphasize—how many otherwise reasonable people seem to believe, for example, that the industrial revolution brought mankind more misery than improvement and that, throughout most of its history, capitalism can be taken as synonymous with conditions of mass unemployment and starvation—a kind of gigantic Welsh mining episode.

Mr. Wilson's other theme is not so easily transposed in a few words. Essentially, however, it appears to be this: while he believes that he has demonstrated that capitalist solutions to most economic problems are technically

and politically less ominous compared with the proposals from the Left, nevertheless this may have little bearing upon the outcome because people in search of a new faith are incurably romantic, irrational and gullible. "It is only by studying the emotional and neurotic aspects of the Marxian religion that the reasons for its strength can be understood. This strength would, indeed, be inexplicable if rationality were an essential quality; . . . . By contrast, a belief in private enterprise, however sincere, scarcely meets the needs of those who want some worldly faith as a means of sublimating their desire for metaphysical certainty" (pp. 253-54). In other words, Mr. Wilson believes, apparently, that economic analysis and sober research are probably of little avail against the strong magnetism of the emotional appeal inherent in Socialism and Communism.

This theme recurs all through Mr. Wilson's pages but is most explicit in the first and final chapters. It is often reminiscent of some of Frank H. Knight's more recent essays though the author makes no reference to these. If this is indeed the author's conviction, then one wishes he had developed this theme more fully. For one rather has the feeling that even the author believes that his economic arguments will not persuade those he would like to reach. If so, might it not have been better to have cast the argument in this mold from the outset?

Norman S. Buchanan

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Unser Zeitalter der Misserfolge—Fuenf Vortraege zur Wirtschaftspolitik. By Walter Eucken. (Tuebingen: J. C. B. Mohr [Paul Siebeck]. 1951. Pp. iv, 72. DM 3.60.)

Contemporary thought on social and economic policy is still dominated by ideologies that were created before or at the beginning of the industrial revolution. There now exists, however, a considerable body of experience with these policies and it is the task of science to utilize it. For the pressing political problem has not been solved "how can an effective order in the modern industrialized world be established that does justice to the dignity of man?"

Professor Eucken proposes to make a step in this direction by investigating the course of German economic policies during the last fifty years. Some of the main problems that political economists have been faced with are taken up and traced through the various forms that they assumed under rapidly changing conditions. Among the problems analysed are: (1) that of monopolistic power—the cartel question; (2) the social problem from its two aspects, low standards of living and insecurity of employment; and (3) the problem of monetary and trade policy. They constitute the topics of three chapters in this book. Another chapter is devoted to a refutation of the "anachronistic contention" that technological development by itself leads to the elimination of competition. Finally, the influence of economic thinking on the course of economic policies in the past is discussed. The author rejects the thesis of the self determination of economic development. "Economic policy does not primarily spring from economic facts but from people's opinion about these

economic facts." Eucken's analysis is keenest and his verdict of the greatest weight in matters of the centrally directed economy, on the power and inefficiency of which no illusions are entertained. He concludes that the range of economic policy is actually limited to a decision between the three fundamental systems: "direction by central authorities, by monopolistic groups, or by competition." The German experience proves the latter to be the superior alternative by far. What then should be the nature of the economic activity of the state? The government is to control the forms of economic life but not to engage in the economic processes itself. It should provide a consistent framework for individual action, an economic constitution. At the end of the disillusioning analysis of past failures there is thus raised a positive suggestion of considerable interest.

In "Our Age of Failures," Professor Eucken's rare gift for brief exposition and concentrated analysis of the principal questions is most fortunately applied. The unpretentious little book is, in fact, one of the most inspired and concise treatises ever written on economic policy. The reader will perhaps disagree with the conclusions arrived at; but he will not fail to benefit from this masterly survey of what appears to be one of the most interesting chapters of modern economic history. The study of this book intensifies the impression of the severe loss that the early death of Professor Eucken has inflicted on economic science. This series of five lectures prepared for and in part delivered at the University of London was posthumously edited by Dr. Edith Eucken, the widow of the author. An English translation, to be edited by Mr. John Jewkes of Oxford, is announced in the preface.

MARTIN BECKMANN

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Free Enterprise and the Administrative State. By MARSHALL E. DIMOCK. (Birmingham: University of Alabama Press. 1951. Pp. x, 179. $2.50.)

In these essays which reprint a series of lectures given in November, 1950, Professor Dimock explains why he believes our free enterprise economy is threatened. He fears that free enterprise will give way to an "administrative state," specifically socialism (p. 167), unless the nation quickly awakens to the danger. He reaches this conclusion by an altogether different route from that taken by Hayek and Flynn. Moreover, while he would regret such a development, he does not think that it would lead to an inefficient economy.

Professor Dimock advances the thesis that the American free enterprise system is in danger of being "lost" because bigness has become the main characteristic of our business life and has brought with it bigness in government and labor. With this bigness have come profound social, psychological and political as well as economic consequences. Dimock thinks that most people are oblivious to the problem. Consequently, neither the nation nor experts in the social sciences have reached a rational and effective consensus about the desirability of bigness. Both the attacks and defenses of bigness are emotional, ill-considered, unscientific, and, at best, only partial. Dimock sees the evils of

bigness to be: rule by an élite while the majority are subordinated to the will of the few; the development of hierarchical levels of command, with most people carrying out orders from above (*i.e.*, regimentation); uniformity of behavior; the danger of serious injury from mistaken judgments because decisions are highly centralized; the appropriation of power for personal and class interests; and failure to recruit sufficient talent to keep the system operating satisfactorily (pp. 56-57).

In Dimock's opinion decentralization can go far toward reducing many of the evils of bigness, but it is not a full solution. It still leaves enormous power at the top, and inflexibility and rigidity of management result from reliance on "rules." As a result, opportunities for initiative shrink. Nevertheless, Dimock urges that decentralization should be carried as far as feasible, for it does mitigate the evils of bigness.

To solve the problem of excessive size wherever it exists, Dimock suggests the following general requirements: first, clear understanding of both the tenets of a free enterprise economy[1] and of the appropriate rôle for government in such a system; second, greater diffusion of ownership and increased economic opportunity; third, a sharing of "power," wherever power exists; fourth, self restraint and an avoidance of excesses; fifth, use of voluntary and private agencies to correct objectionable conditions, but a reliance on government where such agencies will not suffice. In Dimock's opinion, free enterprise will survive only if government is allowed to meet exigencies promptly and fully as they arise. Failure to take sufficient remedial action will expand the ultimate rôle of government, and almost certainly destroy the free enterprise system.

Professor Dimock does not limit his discussion of bigness solely to considerations of productive efficiency and monopoly. Indeed, he devotes one of his five chapters to a discussion of various conceptions of efficiency. He stresses the social, rather than the narrowly economic concept, including all factors entering into national strength and greatness (p. 139), with particular emphasis on the opportunity for individual personalities to realize their capacities to the utmost in every aspect of life (p. 141). In his multidimensional analysis of bigness, he has primarily showed how difficult it will be to find answers; he would not claim to have offered a realistic solution.

Certain readers may find in this book some fuzziness of concept and expression, rambling and redundancy, and unsupported statements that are irksome. Nevertheless, *Free Enterprise and the Administrative State* should provoke economists to reassess the full impact of bigness (even if wholly unassociated with market power) on our entire way of life. Moreover, many teachers will find this book useful to give students a non-doctrinaire and somewhat philosophical discussion of bigness in business and government and of the appropriate rôle for government in a free enterprise system.

Alfred R. Oxenfeldt

The City College

[1] Dimock finds the essence of free enterprise in individual ownership, competition, and managerial freedom.

The Origins of Totalitarianism. By HANNAH ARENDT. (New York: Harcourt Brace. Pp. ix, 477. $6.00.)

This book consists of three essays, richly equipped with quotations and footnotes, with the headings Antisemitism, Imperialism, and Totalitarianism. The reader will find interesting descriptive materials on such varied topics as the economic function of Jewish court bankers in the eighteenth century; the Dreyfuss Affair; the structure of colonial bureaucracy; the function of the secret police in Nazi Germany and Soviet Russia; the purpose of the concentration camps, etc. But he will not find a consistent theory either of the meaning of "totalitarianism" or of the causes for the gowth of totalitarian societies in the recent past.

Political scientists call a government "authoritarian" if no legal means are provided by which the rulers can be replaced at the wish of a popular majority. A society is usually referred to as "totalitarian" if (1) government is authoritarian, and, in addition (2) the rulers claim infallibility, (3) political criticism from outside the ruling group is not permitted, (4) government extends its sphere of action to all fields of human activity, including the regulation of personal habits, beliefs, and associations, and (5) due process of law is not assured to all citizens.

Dr. Arendt uses the term totalitarianism as a literary cliché, without an analytical investigation of its meaning and content. She theorizes entirely by generalization from the ideology or experience of only two historical cases, namely Nazi Germany and Soviet Russia. Fascist Italy, Peronist Argentina and Mao Tse Tung's China are not even considered as possible instances of totalitarianism.

Furthermore, Dr. Arendt fails to ask to what extent totalitarianism is really a modern phenomenon. A study of the historical record might well indicate that ancient societies tended to be totalitarian—limited only by the technical difficulties in earlier days of making controls effective—and that the separation of the functions of the priest, prophet and judge from those of the political ruler, the separation of a private sphere from a public sphere, and the splitting up of political power itself into a legislative and an executive branch mark the slow emergence of a more liberal society. If the latter hypothesis is accepted, modern totalitarian societies would not find their explanation in terms of "origins" but rather in terms of backsliding toward more regressive forms of social organization. In that connection, the resemblance in the structure and functioning of Stalinist Russia and the Egypt of the Pharaohs is certainly striking.

The author does not deal at all with Hayek's thesis that the road to totalitarian serfdom leads by way of the welfare state and of democratic socialism. Neither does she consider the notion, very popular at the moment, that communism thrives best on poverty and, in the case of colonies, on lack of national independence. Instead, she is interested only in the hypothesis that modern antisemitism and modern imperialism have created the psychological climate for the totalitarian movements. While antisemitism was a motivating factor in the politics of the Nazi regime, it is doubtful that it contributed to its coming

to power. Certainly, it is not a factor in the origin of the Soviet regime. As to the factor of imperialism, Dr. Arendt does not seem puzzled by the fact that great ventures of modern imperialism, undertaken by Britain, France, and the Netherlands, have to this day not affected the liberal structure of the mother country in any instance.

The unsatisfactory methods used by the author make the book of little value as a contribution to the taxonomy of comparative political and economic systems, or as a guide in the solution of the problem of preventing additional populations from falling under the sway of totalitarian movements or regimes.

WERNER BAER

Hunter College

National Income and Social Accounting

Income and Wealth. Series I. International Association for Research in Income and Wealth. Edited by ERIK LUNDBERG. (Cambridge: Bowes & Bowes. 1951. Pp. xv, 297. 30*s*.)

The first conference of the International Association for Research in Income and Wealth was held at Cambridge, England in the late summer of 1949. Eight of the fifteen papers read and discussed at that meeting are brought together in the present volume. The long delay in publication is regrettable, and it is to be hoped that a way may be found to produce future volumes more quickly. Most specialists, however, were doubtless either present at the conference or have since learned of the Proceedings through other channels. For them, the volume serves to preserve some of the more important contributions in permanent form. The non-specialist, despite the lapse of time, will find that any attempt to glance quickly through the book is likely to end in a number of hours of rewarding reading.

Taken out of order, the papers in this volume fall into two groups. Four short papers deal with recent experiences in the use of social accounts in as many different countries; an equal number of longer essays are concerned with theoretical and practical problems of income and product accounting.

Among the shorter papers, the one by Gerhard Colm of the staff of the Council of Economic Advisers should be especially useful to teachers. Mr. Colm presents an excellent summary of developments in the United States, and whereas little of it will be new to American economists, it is a survey that instructors may safely recommend to their students. For France, there is a report by Jan Marczewski of the Institute of Applied Economic Science in Paris, printed in French, but accompanied by an English summary. The United Kingdom is represented by E. P. Jackson of the Central Statistical Office, and the Netherlands by G. Stuval of the Central Plan Bureau. Read as a group, these brief surveys reveal interesting differences in the uses to which social accounting is being put in the various countries, and provide numerous examples of the sort of practical problems that are being encountered.

In the longest essay in the volume, Richard Stone of the Department of

Applied Economics at Cambridge discusses "Functions and Criteria of a System of Social Accounting." His seventy-five pages of text and tables afford, in themselves, sufficient material for extended review. "Intertemporal Comparisons of Real National Income: An International Survey," by J. F. D. Derksen of the Statistical Office of the United Nations is a revised version of a paper read at the Cleveland meetings of the Econometric Society in December, 1948. W. B. Reddaway of Cambridge in "Some Problems in the Measurement of Changes in the Real Geographical Product," gives a preliminary report on the extension of the index of production presented by Messrs. Carter, Reddaway, and Stone in *The Measurement of Production Movements* (1948).

The last of the long papers is an essay by Simon Kuznets called "Government Product and National Income." This paper will be of particular interest to those who recall the discussion by Professor Kuznets and the Department of Commerce economists in *The Review of Economics and Statistics* for August, 1948. Few readers could have supposed that Professor Kuznets would be content to let matters rest there, and his sixty-seven pages in the present volume will surely not end the debate. The questions at issue are important to all economists, and involve interrelationships of theory, fact, and vision that ought to be thoroughly explored. The pressure to secure results leads to the adoption of conventions that tend to push these problems into the background, and it would be regrettable if Professor Kuznets were to be regarded as supporting one end of a purely private dispute.

The volume has been admirably edited by Erik Lundberg, who supplies a preface, and an analytical table of contents in place of an index. Much of the hardest work of an editor consists in removing evidence that he has done anything at all, and only a microscopic examination reveals the excellence of Professor Lundberg's performance.

Apart from the obvious importance of the book as a whole, and the substantial progress it attests, the most encouraging thing about it is the recognition by all the contributors of the limitations of their own work. Professor Lundberg tells us in his Preface that in the discussions at Cambridge there was considerable variation in the degrees of confidence expressed in national income statistics, but the papers themselves show consistently commendable caution.

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Wellesley College

Business Fluctuations; Prices

What Happens During Business Cycles—A Progress Report. Stud. in Bus. Cycles No. 5. By W. C. MITCHELL. (New York: Nat. Bur. of Econ. Research. 1951. Pp. xxxi, 386. $5.)

This book is a document Professor Mitchell left in the hands of Dr. A. F. Burns shortly before his death. It is an elaborate account of the results of the well-known enormous statistical investigation in which he was engaged for many years with the assistance of his staff at the National Bureau. The method

followed is the one described in the publication *Measuring Business Cycles* which appeared in 1946. This new book does not cover the complete program which Professor Mitchell had set himself; out of seven parts it only gives three. In an introduction of some fifteen pages Dr. Burns summarises the main findings. Part I of the book again describes the statistical technique used. Part II gives a very detailed account of the findings for a large number of statistical series, whereas Part III concentrates upon the evidence of comprehensive series.

Most interesting to the business-cycle student are, to my mind, the charts showing the average pattern of a large number of statistical series during one cycle expressed as a percentage of the average for the cycle and specified for nine different time points in each cycle. This perhaps may be said to be the most accurate, comprehensive and standardised statistical documentation on cyclical behavior. As a consequence of the technique followed, the graphs do not represent the cyclical component in the usual sense; the trend is also included, but for most of the phenomena this does not very much influence the picture. Here we find many of the well-known regularities of cyclical behavior, *e.g.*, that agricultural marketings are not cyclical at all, industrial production is very clearly cyclical, durable-goods production more so than non-durable-goods production and so on. Certainly, this material is very useful for a number of practical and scientific purposes. Not only that differences in amplitudes are easily discernible, but also differences in phasing. The form of the cycles shows many interesting features. To quote an example, the production of pig iron does not show any evidence of a prolonged bottleneck situation in the neighbourhood of the top of the cycle: the peak is not flat at all. The interesting fact of new orders clearly preceding the cycle is neatly disclosed on page 41. The sharp peak in interest rates cannot be found back in price series even of such commodities as pig iron.

Apart from these graphs, Professor Mitchell gives a host of tables among which are very interesting ones, *e.g.*, the one relating to the indexes of the balance sheets of corporations (p. 139). There are, also, a number of figures of which the use is only restricted, *e.g.*, such coefficients as he calls conformity indexes. These indexes are relative frequencies of conformity in the direction of movement between a given series and the reference cycle; therefore, they are of a qualitative nature and their character is difficult to define. Of the almost 800 series analysed a rather large number are 100 per cent conformed to the general cycle. A small number shows positive or negative lags or an inverted or non-cyclical movement. Most of these facts have been known for a long time, but perhaps not as accurately as has now been established.

Much space in the book is devoted to common language explanations of the findings; given Professor Mitchell's principle that he did not want to include any theoretical element in his investigation, it could not be very much more. Here the limitations of the method which have been discussed before are very clearly felt. It would seem superfluous to go into these questions again. The main value of the book, as I see it, is, in fact, in the element of the very careful and complete documentation. At some places the argument is illustrated by references to some more detailed investigations, such as the interesting investi-

gation by Mrs. Mack about the various stages in the leather and leather-working industry. Here interesting new results are obtained to which many readers will be looking forward. It is shown, for example, that the amplitude of the various stages in this production process has a maximum not at the raw material extreme, but somewhat more in the middle, *viz.*, at the stage of leather production. Also the values have the largest amplitude at that stage (except in one case, where it is the raw material stage). As a last example of highly interesting documentation the cyclical characteristic of Kuznets' figures on capital formation, savings and related magnitudes (p. 154) may be quoted.

J. TINBERGEN

The Hague, Netherlands

What's Ahead for American Business. By SUMNER H. SLICHTER. (Boston: Little, Brown and Company. 1951. Pp. 216. $2.75.)

In July, 1950, Professor Slichter gave a series of five lectures on long-term trends in the American economy at the Stanford University Graduate School of Business. As he was talking, the outbreak of war in Korea the previous month and the world's reactions to it were raising questions about any long-term trends which had been glimpsed without taking account of them.

Consequently, to the treatment of long-term trends he had given in his Stanford lectures, Professor Slichter added a discussion of "The Long-run Implications of the Defense Economy." This discussion, together with a reworking and some expansion of his lecture material, constitutes the subject matter of this interesting and important little book.

The importance of the book springs both from the ideas which it develops and Professor Slichter's extraordinary prestige among American business men. Within the limits of the not inconsiderable observation of this reviewer, his opinions carry more weight by far among American business men than those of any other American economist.

This extraordinary prestige, which gives special importance to what he thinks is ahead for business, arises in considerable part from the fact that, unlike many and perhaps most academic economists, Professor Slichter does not hesitate to express his views on the subject unequivocally. This manner, I am confident, does not arise from any overweaning confidence in his capacity to foresee the future surely. I have no doubt that it arises from Professor Slichter's discovery that if a business man is asked to consider "on this hand or then again on the other hand," he generally loses interest in both hands. I have heard more than one business man say, "I won't blame you if you're wrong in your judgement about what is going to happen, but to have a chance of being helpful to me you must be definite." Professor Slichter is definite.

Also, on the whole, he is optimistic about what's ahead for business. During a period when Cassandra holds such heavy sway over so many economists, that fact adds importance to Professor Slichter's views. He sees our economy picking up the defense load in its stride, continuing to grow and in the process preserving its "most valuable characteristic" which he sees as "the opportunity and responsibility it gives to the individual."

It strikes me that in some particulars Professor Slichter may be a little too

optimistic. I have less confidence in the future stability of our economy than I understand him to have, and feel that the gyrations of consumer expenditure—largely a reflection of the fact that we have become so rich—since he announced his conclusions on this point have given some substance to my fears. Doubts on a few points, however, do not affect my general feeling that he has arrayed most of the main forces which can be expected to shape our economy in the years immediately ahead and indicated in a clear and meaningful way what their impact may be. That is all a book on what's ahead for business can do, but it is a constructive performance of no mean proportions.

DEXTER M. KEEZER

New York, N. Y.

Measures of Business Change. By ARTHUR H. COLE, with the assistance of VIRGINIA JENNESS and GRACE V. LINDFORS. (Chicago: Richard D. Irwin. 1952. Pp. ix, 444. College ed., $7.50.)

The author states that the original impetus to this volume came from a desire to bring to date the *Index to Business Indices*, edited by Professor Donald H. Davenport and Miss Frances V. Scott, published in 1937. A re-survey of business and governmental literature led the author and his collaborators to abandon the idea of pretending that this book is a revision of the earlier one. Nevertheless, users of the earlier volume will welcome the present improved and expanded one.

The present excellent volume is divided into five sections. First, there is a list of indexes in the order of their presentation. Second, there is a list of basic sources of statistical information. Third, there is an alphabetical list of compilers with their addresses. Fourth, there is a list of national measures of change which occupies about half the volume. There are 297 national measures, covering measures of general business activity, commodity prices, construction costs, employment and finance. Fifth, there is a list of regional and local measures of change. The first part of this section contains information on multiregional composites such as Dun and Bradstreet's "Regional Trade Barometers." The other type of regional index is designed to measure change in a single geographic section, such as a Federal Reserve District, a state, or even a single city. These regional measures are arranged geographically by eight districts.

In all, the volume contains information on 449 measures of business change. For each series there is information on the subject, the compiler, the frequency of publication, the publication or location of current data, where to find historical data on the particular measure, the period of time covered, and a brief description of the series. The materials have been well chosen and arranged for easy reference.

The only shortcoming of the volume arises through no fault of the author. Unavoidably frequent revisions of statistical series place time limits on the appropriateness of much of the information. Due to the author's foresight, however, blank pages have been provided for additional indexes.

This highly desirable reference work will be useful to students and teachers of statistics, anyone interested in business and economic research, a wide

variety of business men, investors, corporate executives, students of business cycles, and many others.

W. N. PEACH

The University of Oklahoma

Money and Banking; Short-Term Credit; Consumer Finance

The French Franc between the Wars 1919-1939. By MARTIN WOLFE. Stud. in Hist., Econ. and Public Law, No. 569. (New York: Columbia University Press. 1951. Pp. 229. $3.25.)

There is a dearth of scholarly monographs dealing with France's monetary drama—the eight franc devaluations in the last thirty years under the impact of two world wars, two postwar reconstructions, and an interwar political, social, economic, and financial crisis. The story up to 1929 had already been told by three American authors, Eleanor L. Dulles, Robert M. Haig, and James H. Rogers, in books written in the 'thirties, but the subsequent developments had not been systematically surveyed by an American economist prior to the recent publication of Mr. Wolfe's monograph here reviewed.

Mr. Wolfe places the monetary events within the broad framework of political, social, economic, and financial developments and institutional changes. The resulting picture appears, on the whole, to be a realistic one. He broadly surveys the post-World War I inflation, the franc's stabilization of 1926-1928, the years 1929-1932 when the franc appeared as the strongest world currency, the depression and the deflation of 1933-1935, the reflation and the wave of devaluations from 1936 to 1938, and the franc's rehabilitation on the eve of World War II. The atmosphere of these successive periods of France's interwar monetary history is convincingly recreated. As an introduction to more intensive study, the book accordingly serves its purpose excellently.

Mr. Wolfe's survey is, however, largely chronological and descriptive. He does not undertake a comparative study of the various phases of France's interwar monetary history. Nor does he discuss the "theories" that were put forward by French and other economists to "explain" the interwar monetary developments. A critical survey of these "theories" and their confrontation with the subsequent factual developments and theoretical thinking still remains to be done.

The single dominant impression that emerges from Mr. Wolfe's monograph is the multiplicity and complexity of the factors of inflation in a country like France. At certain periods, cyclical fluctuations in the national economy, including changes in national income, employment, and investment, appeared to be the predominant factor. More often, however, the forces that shaped the course of monetary events were predominantly psychological; large-scale capital movements or speculative attitudes regarding exchange rates and prices undoubtedly were on occasion more important than the underlying economic or financial factors. The stubbornness of the inflation thus seems fundamentally connected with the Frenchman's highly individualistic character. It is a matter of historical record that fiscal restraint was effective only when the

government secured the wholehearted acceptance by the population of the required sacrifice, as under Poincaré; that the connection between political freedom and a free exchange market—*i.e.*, the inadvisibility of exchange control—was a political axiom even under the Popular Front governments; and that the manifold variety of interwar monetary experience—inflation, currency stabilization, deflation, reflation, the managed currency, and the successive devaluations—took place within the framework of a free economy, since a controlled economy was a political impossibility in the 'thirties (and actually proved unworkable from 1945 to 1948). The lesson that therefore can be drawn from French monetary history is that political and economic freedom makes it imperative to maintain reasonable currency stability. The issue is essentially one of political and economic statesmanship, as well as of self-discipline on the part of the people.

M. A. Kriz

New York, N. Y.

Business Finance; Investments and Security Markets; Insurance

The Investment Company and the Investor. By Rudolph L. Weissman. (New York: Harper and Brothers. 1951. Pp. xxi, 217. $3.50.)

The introduction to this little volume states that it is written for the general public. Consequently, seven prefatory pages are devoted to an informal preview-summary, and three more to a collection of definitions. The body of the text, ten chapters covering 206 pages, discusses in turn the history of investment companies, the Investment Company Act, the operating policies and objectives of investment companies (including some case studies), closed-end companies, open-end companies, and the social significance of investment companies as providers of capital. Brief statistical tables and a short index are appended.

This book reflects the author's broad experience and wide reading in the field. It presents both fact and personal opinion, and ranges widely over history, law, and commercial practice. It will be interesting to the experts and very helpful to readers with a rudimentary knowledge of the subject. But this reviewer feels that beginners who do not have a clear technical understanding of investment companies, embracing such things as types of companies, the policies they pursue, and the common methods of appraising their accomplishments, may miss much of the value of this book. The author uses the jargon of the securities business freely, and his explanations of such tricky things as formula planning systems, measures of performance, and investment company taxation are somewhat sketchy. The real merit of the book lies in the penetrating observations and off-hand remarks scattered through it, rather than in its description or analysis.

Three disappointing aspects of the book may be noted. First, there are numerous references to or quotations from enticing sources, without source references. These are especially frequent in the earlier chapters. Second, the book appears to have been hastily written, and the author has not always been

careful to guard the unity and clarity of his paragraphs. Third, the book fails to provide comprehensive summaries at many logical points—for example, on the pros and cons of salient investor choices, such as those between open-end and closed-end funds or common-stock and balanced funds.

Although the author's preface discloses his enthusiasm for the investment company idea, the book is dispassionate and free from prejudice on controversial points. It must be classed as a sound and worthy contribution to the literature of its field.

JOHN C. CLENDENIN

University of California, Los Angeles

Public Finance

The Nature and Tax Treatment of Capital Gains and Losses. By LAWRENCE H. SELTZER, with the assistance of SELMA F. GOLDSMITH and M. SLADE KENDRICK. (New York: National Bureau of Economic Research. 1951. Pp. xxii, 554. $7.50.)

This excellent book is the first comprehensive study of one of the most highly controversial subjects in taxation. Its contents fall under four main headings: (1) nature of capital gains and losses; (2) facts on their distribution; (3) effects of present and past tax treatment on investors' behavior and government revenues; and (4) alternative methods of taxation. The solid factual basis of the work and the author's attention to actual business situations, administrative and compliance problems, and public and Congressional attitudes give the book a realistic and practical quality.

The purpose of the study is not to advance recommendations but to present analyses and empirical materials from which the reader can draw his own conclusions. Although Professor Seltzer's impartial method of presentation does not prevent him from disposing of many fallacies and misunderstandings, it may obscure the full significance of some of his evidence and reasoning and does keep him from stating an opinion on doubtful points.

Capital gains and losses, according to the legal concept, are casual, sporadic, and unexpected, as distinguished from ordinary income which consists of regularly recurring receipts from a fixed and continuing source. Economic theory emphasizes the unexpected nature of true capital gains and losses. Both definitions turn ultimately on the beliefs and intentions of property owners and therefore provide no objective and verifiable differentiation between ordinary income and capital gains and losses. In practice, the distinction is based on more or less arbitrary rules with respect to nature of the property, length of holding, and frequency of transactions. These rules, however, do not separate expected and unexpected changes and hence draw no clear line between pure capital gains and profits, interest, and other income shares. The anticipation of developments that will result in capital gains or losses within the tax definition is an important influence on investment decisions and other economic behavior. Capital gains and losses that do not enter into total national income nevertheless change relative positions of individuals.

In his treatment of various objections to taxing capital gains and losses like ordinary income, Seltzer argues that there is no presumption that capital gains represent more or less tax-paying capacity than ordinary income. The objection that, since the selling price of an asset reflects its expected future yield, taxing both capital gains and other investment income results in double taxation applies with equal force to the part of ordinary income that is saved. Gains and losses due to changes in interest rates are similar to those resulting from other changes in relative prices. Changes in the general price level produce illusory capital gains and losses, but it would be difficult and confusing to eliminate these spurious items. Nor is it clear that, except after an extreme inflation, any feasible adjustment would represent a net improvement in equity.

An extensive statistical study of realized capital gains and losses reported on tax returns, 1917-46, largely the work of Mrs. Goldsmith, is presented in two appendixes (200 pages) and summarized in the text. Although individual experiences differ widely, capital gains are heavily concentrated in higher-income brackets and are an important component of large incomes. Some evidence suggests that losses are relatively largest in middle-income brackets. Gains and losses are unlikely to cancel for individual investors; hence, equal limitations on the proportion of gains and losses taken into account for tax purposes will accentuate gains of some and losses of others.

Any tax on realized capital gains will cause some property owners to postpone sales and tax liability, and a deduction for realized losses will stimulate some sales. The fact that appreciated property can be transferred at death without incurring a capital gains tax is an added inducement to postpone gains. It has been charged that capital gains taxes and loss allowances impede capital mobility and accentuate stock market booms and collapses.

After careful review of statistical evidence for several periods, Seltzer concludes that the top income groups have been "clearly and markedly" sensitive to taxation in realizing or deferring gains. Other groups have reacted less clearly and consistently. The trend of stock prices and the volume of trading have been more important influences on realized gains than either tax treatment or national income. The author finds no convincing evidence that the capital gains tax contributed to the stock market boom of the 1920's and the subsequent collapse. He is less definite with respect to other periods, but emphasizes that tax treatment of capital gains and losses is only one of many influences on market trends. Seltzer recognizes some validity in the charge that capital gains taxation interferes with optimum capital mobility, but my impression is that he does not attach great weight to this point. He apparently accepts the opinion that preferential taxation of capital gains has stimulated investments whose return can be realized in that form but does not discuss in detail this point or the effects on investment of eliminating the preferential rates.

Revenue from taxing capital gains has been erratic and small, possibly negative, but Seltzer argues that this is not a good reason for exempting gains in view of differences in individual experiences and the greater stimulus to efforts to convert ordinary income into capital gains that would result. The review

of tax avoidance devices already flourishing under the preferential rates will be especially revealing to readers who are not familiar with the scattered technical discussions of this problem.

Tax treatment of capital gains has ranged from taxation at ordinary rates, in the United States 1913-21, to complete exemption, in the British Commonwealth. The summary of several national systems indicates that most are compromises of the extremes and that even the British method is not so simple or extreme as is often supposed. The concluding chapter is a summary of arguments for and against the extreme positions and a critical examination of proposed alternatives, most of which are concerned mainly with the averaging problem.

The book will not settle the controversy about proper tax treatment of capital gains and losses. Doubtless it will be cited in support of very different positions. But availability of the material here presented should do much to improve the quality of discussions of the subject.

RICHARD GOODE

Washington, D.C.

Taxation and the American Economy. By WILLIAM H. ANDERSON. (New York: Prentice-Hall. 1951. Pp. xxi, 598. $6.00.)

Asserting the need for a public finance text that provides a "thorough and well-balanced course in taxation alone," Professor Anderson has written a very readable text for an elementary course in taxation. The volume is divided into eight parts. The first deals with the foundations of American taxation, including, in addition to chapters on incidence and burden, the constitutional basis and the rôle of administration. Thereafter, the chapters are grouped under the following taxes: property, income, gifts and inheritances, business, and consumption. Part 7 deals with miscellaneous taxes and non-tax revenues, and the concluding group of chapters relates taxation to economic stability and fiscal policy.

In view of the care devoted to the presentation of material in this text it is important to be clear on the rôle it is designed to play in public finance courses. If it were used in an elementary course in public finance, a supplementary text would be required for materials on public spending and the economics of the public debt. On the other hand, it is appropriate for a tax course only if the student has not had a general course in public finance. Except with respect to legal and administrative aspects of taxation, this book does not do more than is ordinarily accomplished in the standard public finance texts. The author has consistently presented the arguments on both sides of every question, in summary form and often without much elaboration. This device certainly simplifies the work of the student, particularly where the issues are fairly clear cut. But it is much less satisfactory when economic problems are discussed, and a carefully reasoned analysis is called for. An unavoidable weakness of the book as a college text arises out of the aim of the author to write a taxation text that "can also serve as a correspondence course on taxation and as a reference book for the interested citizen" (p. xx). These objectives are by no means completely consistent.

The material is presented logically, and a number of pedagogical devices have been used that assist the elementary student. Assumptions are carefully stated; conclusions are neatly summarized; and tables and charts are simply presented. Where a knowledge of economic theory is required, for example, in shifting and incidence, the assumption is made that the reader has had no previous training in economics. While this helps the correspondence course student, it dilutes the material considerably for others. It may be questioned whether any student needs the cartoon on page 138 to stimulate his interest. A desirable feature from the point of view of the taxpayer who wishes to keep informed is the fairly broad bibliographical coverage, as well as the list of government and private publications relating to tax matters.

KENYON E. POOLE

Northwestern University

International Economics

Making Western Europe Defensible—An Appraisal of the Effectiveness of United States Policy in Western Europe. By THEODORE GEIGER and H. VAN B. CLEVELAND. Planning Pamphlet No. 74 (Washington: National Planning Association. 1951. Pp. viii, 85. $1.)

The idea of European political and economic unity has stirred the imagination of many minds on both sides of the Atlantic and beyond. Since the initiation of the Marshall Plan fostering European economic integration has become part of U.S. foreign policy. Messrs. Geiger and Cleveland, until recently leading officials of the Economic Cooperation Administration, are in a particularly good position to give their views on this question.

The authors deal—contrary to what the title might lead one to believe—primarily with the political and economic problems of European unification. The authors see two basic weaknesses in the European continental economies (as distinguished from the United Kingdom): economic stagnation and economic inequity. Stagnation is exemplified by a low rate of productivity and of national income increase. This has promoted inequity, *i.e.*, maldistribution of income, which is accompanied by "continuing bitterness between labor and management." Although "union is not the panacea which will solve all of Western Europe's problems," the authors believe that it will "provide an environment which is conducive to the adoption of rigorous economic policies necessary to make Western Europe strong and healthy." They favor the functional approach: there should be more bodies like the Schuman Plan High Authority; for instance, a Federal Reserve Board-type monetary authority, into which the present European Payments Union should be changed, and a European Defense Ministry. Although there would be a European parliament, which should, *i.a.*, approve the Union budget, the center of work would be in the executive departments: initially one for economic affairs and one for defense. All this is suggested—along the lines of the "Pleven Plan"—for the continent of Europe which with the United Kingdom and the United States would form a reorganized tripartite Atlantic Organization. The United States

should urge the adoption of the necessary institutional arrangements "not as a rigid blueprint but as a reasonably definite announcement of goals to be reached within the next two or three years."

These are in a nutshell the ideas of Mr. Geiger and Mr. Cleveland. It is fortunate that the authors do not see the mere creation of "a single European market" as the sole remedy. There can—to this reviewer's mind—be little disagreement with the "functional" approach to European unification which with the Schuman Plan is anyhow taking concrete form in Western Europe. The question is how comprehensive the functional approach, even if eventually merging into the constitutional approach, need and can be. Is it sufficient to "unify" such basic things as iron, coal and steel production, international payments, and defense? Or must such fields of diversified human activity as the textile and chemical industries also be put under a central authority, and if so, is that practicable? In a wider sense: in how far would the restoration of multilateral world trade solve Western Europe's problems? To what extent might the economic unification of the Atlantic Community be a better alternative that the "continental" approach? What is the relationship between Western Europe's "dollar shortage" and economic unification?

A discussion of these questions is absent and might have provided a more logical link—if any—between the description of Europe's ills and that of the therapy of unification. The economic analysis of Western Europe seems too much based on certain of the larger countries. The authors make a sharp distinction between the United Kingdom and the Continent: the U.K. economy is assessed to be much stronger than the continental economies and is kept outside of the unification proposal. The first is contradicted by facts and the second is according to many less desirable than inclusion of the United Kingdom in unification.

Nevertheless, Messrs. Geiger and Cleveland's presentation of the "unification" problem can be considered an excellent and timely contribution to the growing literature on the subject. What now appears necessary is a more complete "catalogue" of the problems involved in political and economic unification.

JOHAN KAUFMANN*

Washington, D.C.

* The reviewer is attached to the Netherlands Embassy. His views are personal ones.

International Economic Disintegration. By WILHELM ROEPKE. With an Appendix by Alexander Ruestow. (New York: Macmillan. 1950. Pp. xii, 283.)

Roepke's *International Economic Disintegration* is the third impression of the original text, published in 1942. Since that time, the author has published several books on related topics among which *The Social Crisis of Our Time* is best known to American readers.

Roepke's criteria for international disintegration are shrinkage of the total volume of world trade, increased immobility of production factors, and "nationalization" of money. His analysis is basically sound; his method of pres-

entation, however, is too lengthy in some parts and incomplete in others.

Up to World War I the forces of protectionism, though powerful in many countries, did not succeed in obstructing the tremendous expansive forces of world trade. The international flow of capital and labor was instrumental in creating an integrated system of international economic relations reducing comparative disadvantages. Since the end of World War I the movement of protective forces gained momentum to such a degree as to cause a disintegration of the old world economy.

Roepke analyzes the most conspicuous manifestations of protectionism. He shows that agricultural protectionism does not achieve the goal sought by its advocates. In Roepke's opinion European countries ought to abstain from protection of cereal production and follow a constructive policy of favoring the producer of protective food like milk, eggs, cheese, and meat. Family size farms will have a good chance if they concentrate on the production of high quality products. Similar programs have been adopted by several Western European countries during the last years. Roepke's ideas also show similarity with the much debated Brannan Plan which recommends support of family-size farms, subsidies for perishable farm products, and qualitative control. Roepke's concepts of American farming, however, are somewhat erroneous. He refers exclusively to "giant wheat farms" and "pig factories," and shows no familiarity with the structure of American dairy farming or fruit growing.

Roepke's chapters on industrialization do not bring out clearly the difference between industrialization of highly developed countries and industrialization of underdeveloped areas. In accordance with his aversion against big cities he welcomes decentralization through rural electrification. In the chapters on agriculture as well as in the discussion of industrialization Roepke reveals his glorification of small private enterprise *versus* giant corporations.

Roepke considers the breakdown of the gold standard as cause and effect of international economic disintegration and shows the rôle of exchange control in providing the framework for national planning. Cognizant of the obstacles in the path of return to the old international system and conscious of the paramount importance of a greater degree of security and stability than the nationalistic economics could ever achieve, he suggests a return to small enterprises owned by individual owners. To this form of organization he attributes mysterious virtues, especially the creation of a feeling of security and stability.

Roepke's social analysis which is supplemented by Ruestow's appendix attributes to the "laissez-faire" principle only limited usefulness. The success of this principle seems predicated on a world order in which individuals as well as nations adhere to the postulate "*Pacta Sunt Servanda*." It is, however, less self-evident that the development of big industries is responsible for the breakdown of the old order and that industrialization leads inevitably to proletarization, socialism, and fascism. During the last two decades nearly every industrial country adopted measures to promote economic stability. Current discussion centers primarily around the question of the degree of economic intervention without questioning economic intervention as such. The most recent contribution to the discussion of economic policies developed by Galbraith in his *American Capitalism* analyzes the regenerative forces within

the industrial system and shows convincingly that the "third way" does not imply return to the peasant-farmer and artisan glorified by Roepke and other adherents of a neo-romantic approach to economics.

MARTHA STEFFY BROWNE

Brooklyn College

Major Problems in United States Foreign Policy, 1951-1952. By the staff of the International Studies Group of the Brookings Institution (Washington, D.C.: Brookings Institution. 1951. Pp. xiv, 497. Paper, \$1.50; cloth, \$3.00.)

This is the fifth in a series of annual textbooks on international relations designed to teach by the case method. It is less interesting to economists, perhaps, than earlier volumes, since the attention devoted to economic problems is reduced. The book is organized into three parts: an introduction, recapitulating United States foreign policy to the end of 1950; a long problem paper, this year on the powers of the General Assembly of the United Nations and its rôle in collective security. Only the central survey of current problems deals directly with economic matters. This is done in one functional chapter on economic questions, coordinate with political, military and United Nations subjects, and in several regional treatments, particularly those on Europe and the Middle East.

However effective the case method may be for teaching international relations to students—(this reviewer, a simon-pure amateur, has his doubts)—it does not make for easy or pleasant reading. The Procrustean outline of Problem, Main Issues, and Alternative Solutions does not always fit the subject matter; in addition, the way of stating the problem frequently provides the answers. "The problem is to develop methods for increasing the supply and controlling the price of critical raw materials that are required for the rearmament program and allocating them internationally" (p. 128). As it turned out, this wasn't the problem in a number of commodities, like sulphur and cotton, where the price system rationed users and increased output.

Recovery and rearmament, raw materials, economic development, east-west trade in Europe, European integration (including the Schuman Plan) and Middle East oil are covered in the 1951-52 volume. The inevitable time lag between writing and publication has produced certain difficulties. ". . . The virtual disappearance of the dollar shortage was an important event." True of 1950, but not of 1951. The treatment of the Anglo-Iranian Oil Company nationalization especially fell behind the march of events. The problem is not one of Soviet aggression against Iran, nor, as the United Fruit Company case in Guatemala proves, is it strictly a Middle Eastern problem.

Scope, the case method and time lags are perhaps not to be charged as faults (even though they make the book less useful in economic teaching). What is surprising is that such economic discussion as remains is treated qualitatively, without that judicious mixture of statistics and adjectives which one expects from the Brookings Institution. Middle East oil is "significant," "of vital importance" (pp. 268, 269). "The economic strength and basic capacity of any country to support a large or long-continued struggle against

aggression would be adversely affected by a drastic decline in exports and its capacity to produce for export" (p. 126). The nature of the non-economic audience for which the book was designed may account for the lack of quantitative treatment of economic questions. This lack, however, reduces its value for economists.

C. P. KINDLEBERGER

Massachusetts Institute of Technology

Business Administration

Managerial Economics. By JOEL DEAN. (New York: Prentice-Hall. 1951. Pp. xiv, 621. $5.00.)

Schools of business administration have been endeavoring in various ways to make an effective use of economic analysis in their curricula. Included in these attempts have been some tentative, systematic formulations of the economics of the enterprise. *Managerial Economics* will be welcomed by all who have hoped to develop an adequate theoretical-empirical treatment for the needs of students in business administration and by all economists interested in the economics of the firm. In appraising this book, I shall pay particular attention to its adequacy in terms of the curricular need. The publisher's blurb and the preface, however, are pointed at the broader market of industrial executives; and the scope, style and form of analysis and presentation are better adapted to the needs of professional economists employed by business than to students.

Although I take personal responsibility for the views expressed here, they have the broader authority of four organized discussions among faculty members of the School of Business Administration at the University of California. Because of our strong interest in the subject matter of the volume and our own curricular needs, we examined *Managerial Economics* chapter by chapter in relation to our own experience and the available literature. Some members of our faculty have used or are now using the book in our course, The Economics of Enterprise, or in other connections.[1]

Managerial Economics opens with an illuminating chapter on profits in which both economic and accounting analyses are employed. The second chapter is a lengthy examination of the types and nature of competition, largely in the form of readings from other authors. The third chapter deals with multiple products in an introductory and transitional manner; the meat of this analysis is scattered throughout subsequent chapters. Chapter 4, a comprehensive, realistic treatment of demand analysis, represents one-fifth of the volume. Chapter 5, on cost, based heavily on Dean's own published work, absorbs one-sixth of the pages and contains some of the best analysis in the volume. A brief chapter on advertising precedes three chapters on basic price,

[1] I am indebted particularly to the following colleagues: D. A. Alhadeff, R. A. Arnold, H. Brems, J. P. Carter, D. A. Fergusson, F. G. Hill, R. W. Jastram, R. E. Jay, L. M. Laurenti, R. Luce, S. J. Maisel, F. Morrissey, and J. Rogers.

product line pricing, and price differentials. The chapters on pricing contain some new analysis, but are characterized primarily by realistic application. The final chapter deals with capital budgeting, on which Dean has recently published a separate volume.

All of us agree that *Managerial Economics* is a contribution to the literature. The volume might well have been a classic if the author had enlarged the scope of the analysis and had done a thoroughly integrated piece of analysis and writing. The volume will be very helpful and will be used widely, but does not provide an ideal or even an adequate solution to the needs of business schools or of business executives who wish to apply economic analysis in policy making.

The comments in this review may, perhaps, appear overly critical, but they are offered with the hope that the author or someone else may find these suggestions helpful in preparing a more adequate statement. Some criticisms of the volume arise out of its restriction to selected topics of interest to the top management of large industrial corporations, especially manufacturers. The author did not intend to write a comprehensive treatment of the enterprise in the economy. Furthermore, large sectors of private enterprise are not touched at all or are mentioned only in relation to the interests of manufacturers. Especially noteworthy is the omission of the great area of retail and wholesale distribution. Even within the orbit of manufacturing enterprise, the analysis of the marketing channel is very skimpy. It is surprising, in view of the stress upon manufacturing, that the interesting and complicated problem of resale price maintenance by manufacturers receives only brief reference. It is even more surprising that brand and brand promotion problems and policies and non-price competition in general are examined only sketchily. Product differentiation and variation likewise are given less attention than their importance warrants. Some portion of the materials included might well have been omitted from the volume in order to make room for these and other neglected topics. For instance, much of the discussion of product planning, discount structures, product line pricing and advertising could be treated in courses in marketing or in production organization and planning.

Within the planned orbit of the volume the following limitations in style, form of presentation, selection of materials, and of analysis and treatment were highlighted in our discussions.

1. The volume was not planned and written as an integrated unit. Much of the book consists of quoted materials from other authors (especially Chapter 2). A large proportion of the materials, though not quoted directly, are taken with little adjustment from the valuable articles and monographs previously published by the author (see page vi for the list of acknowledgments) or from work in which he has participated (such as *Cost Behavior and Price Policy*, National Bureau of Economic Research, 1943). Another sizable portion consists of case materials from numerous sources. Illustrative case materials and selected readings have not always been selected wisely or used effectively. Such materials do not appear in some instances where they would be helpful (as in the discussion of profits); occasionally excellent studies are passed up entirely. The author did not succeed in amalgamating all of the separate materials and

his own new work into an integrated discussion. There is no thread of analysis that runs through the volume, although the initial chapter on profits held out such prospects. The method of assembling has produced numerous ambiguities and obscurities in the use of terms, definitions and concepts. One gets the feeling that the volume is a compromise between a book of readings and an integrated treatment.

2. Non-verbal, graphical, diagrammatic and tabular presentations are not employed as frequently or as expertly as would seem reasonable. Graphical presentations could have been exceedingly helpful in some parts of the analysis in which they are not used. Many readers will find explanations of some of the graphic and tabular material less than adequate. In at least one instance (Table 9-1 listing the variety of price structures) the tabular presentation is well nigh incomprehensible in relation to the explanation in the text.

3. Summaries, though numerous, are not used well throughout the volume. Some are not true summaries, but introduce new material, and some are too much so—that is, summaries of summaries.

4. The style and level of presentation unfortunately are highly uneven. Readers will have great difficulty in obtaining the optimum return for their reading time. The unevenness stems, of course, to some extent from the process of assembling materials from numerous sources. It arises also out of a variable mixture of accounting, economic, statistical and econometric forms of analysis pitched to different levels of sophistication.

5. Oligopoly theory is used very little although the area of chief interest is pre-eminently that of oligopoly (that is, large-scale manufacturing enterprise). Even granted the incomplete and unsatisfactory character of oligopoly theory, some portions of it could have been presented in a manner and at a level both suitable and useful to readers.

6. There is scant reference to the social, political, and other environmental factors that influence policy making by business executives. Perhaps it may be assumed that such discussion is unnecessary for the readers in business. It would be helpful, however, to university students.

7. Although the volume does not profess to analyze the functioning of the economy as a whole, there are disconcerting lapses in which social value judgments are made without reference to a broader framework. There is even a brief dip into the complicated field of welfare economics. This type of digression is not unusual in the volume. Readers not infrequently are dropped in over their heads without the benefit of swimming lessons. Consequently, so far as university instruction is concerned, the volume is much better adapted to the graduate seminar than to undergraduate instruction, or even to systematic graduate instruction when students have a weak foundation in economic analysis. Our faculty members found it necessary to supplement the volume by heavy additional reading assignments for the purposes of our course, The Economics of Enterprise.

8. The heavy reliance upon the author's previously published work occasionally sets the scope of analysis too narrowly. For instance, instead of the chapter on advertising, it would have been preferable if the analysis had taken

the broader orientation of the accepted distinction between selling and production costs as employed by Chamberlin and others. This orientation would have placed certain neglected areas in better perspective, especially product differentiation and brand promotion.

In spite of the limitations of *Managerial Economics*, we are grateful to the author for making it available in this form. It does provide a useful collection of materials and some brilliant new analysis and insights. It will undoubtedly come as a spur and aid to other scholars. It combines economic, accounting, statistical, and econometric analysis in a revealing manner, even if some readers are taken beyond their depth. The contrasts of accounting and economic concepts and analysis are especially revealing. It is the most significant attempt to date in this country to put the economic theory of the firm to work. It will be valuable in dispelling the misconception that it is easy to apply economic analysis to business problems. It will be interesting indeed to observe the attempts in the next few years to build on this study and others now available or in process. Perhaps Joel Dean himself will write the classical, integrated analysis towards which he has made such notable contributions, and for which he is so admirably fitted.

E. T. Grether

University of California

The Nature of Competition in Gasoline Distribution at the Retail Level, A Study of the Los Angeles Market Area. By Ralph Cassady, Jr., and Wylie L. Jones. (Berkeley and Los Angeles: University of California Press. 1951. Pp. xii, 220. $3.50.)

In preparing this study the authors had two objectives in view: (1) a microscopic analysis of competition in a particular market and (2) the development of useful methodological tools for future studies of this kind which they (and the reviewer) hope will be forthcoming.

In the first eleven chapters the authors analyze demand, supply, the nature of rivalry among dealers, and retail dealers' margins. In keeping with their first objective the authors limited the scope of their analysis to the sale (largely at the retail level) of gasoline in the Los Angeles area. Accordingly, they were able to give much more attention to those market phenomena that are either ignored or receive only cursory attention in the more conventional industry studies. Starting from the realistic assumption that "demand for gasoline at retail must be related to a particular place in order to be completely meaningful" (p. 26), the authors discuss the effect such factors as proximity and accessibility of outlet, appearance of station, cleanliness of facilities, credit terms, prices, brand of gasoline handled, courtesy of attendants, promptness of service, nature of free services rendered, etc., may have upon consumer patronage. Since patronage is a function of so many factors, competition among sellers obviously takes on many varied forms, thereby giving rise to several types of suppliers, *e.g.*, the major-company and subsidiary-company dealers for consumers who attach much significance to brands and non-price inducements, and the self-serve stations for price-conscious consumers who are quite

willing to perform minor services themselves.

The authors find, however, that some sellers may be considerably more limited in their choice of competitive methods than others. Hence, the authors classify sellers, according to the degree of freedom they enjoy and the independent action they take, into *conservative, aggressive,* and *defensive* price competitors. The conservatives are mainly outlets for the major companies and account for about 75 per cent of sales in the Los Angeles area.

Chapters XII and XIII provide an analysis of gasoline pricing and price behavior, and include a fairly comprehensive treatment of price flexibility, price trends, price leadership (with price leaders identified), retail-wholesale and retail-crude price margins, and the structure of retail prices for selected recent dates. Chapter XIV contains a brief summary of the study and the authors' conclusions, the most important of which are (1) the Los Angeles retail gasoline market is vigorously competitive, (2) the method used in studying competitive behavior was satisfactory, and (3) the scheme of making minute analyses of submarkets depends upon the framework provided by broader studies for its success. The authors' "micro-analysis" was made possible by fairly extensive use of the interview and questionnaire method of obtaining data and by numerous factual observations, though considerable use was made of government publications, trade journals, and other sources. Researchers are warned not to undertake such projects unless an adequate and competent staff of research assistants is available.

For several decades students of the monopoly problem have lived largely on a diet of literature in which the market place has been very loosely defined or ignored altogether. This contribution therefore comes as a welcome addition to that small body of literature concerned with competition at the local market level such as the several fluid-milk market studies, a recent study by the same authors,[1] and others.[2] The study would have been greatly improved had much more of the relevant analysis and material been included in the text instead of being relegated to lengthy footnotes. Since the authors' conclusions on the effectiveness of competition in the retail gasoline market of Los Angeles are wholly at variance with those of the Department of Justice (p. 212, fn. 1), they could have profitably devoted an entire chapter to reconciling the two seemingly opposite sets of findings.

These shortcomings notwithstanding, the study presents many useful insights into methodology and into competitive behavior at the local market level. It merits the attention of all those concerned with the relevancy of economic theory to empirical research and to the framing of public policy toward industry.

Jesse W. Markham

Vanderbilt University

[1] Ralph Cassady, Jr. and W. L. Jones, *The Changing Competitive Structure in the Wholesale Grocery Trade* (Berkeley and Los Angeles, University of California Press, 1949).

[2] *Cf.* Rayburn D. Tousley and Robert F. Lanzillotti, *The Spokane Wholesale Market*, Econ. and Bus. Stud. Bull. No. 18, The State College of Washington (Pullman, 1951); and similar studies by bureaus of economic and business research at the University of Illinois, the University of Alabama, and others.

Industrial Organization; Public Regulation of Business

Mobilizing Resources For War—The Economic Alternatives. By TIBOR SCITOVSKY, EDWARD SHAW and LORIE TARSHIS. (New York: McGraw Hill. 1951. Pp. x, 284. $4.50.)

In this study an eminent group of Stanford economists presents a plan for policy in a high-level defense and war economy.

Part I contains an interesting and useful set of quantitative projections of gross national product and components from 1950 to 1955, when an all-out war situation is assumed to apply. The model seems reasonable on the whole, although I feel that the magnitude of the inflationary gap is overstated, the assumption of a voluntary wartime savings ratio of 5 per cent being rather on the low side. However, these are matters of judgment and depend on the length and nature of the emergency which is postulated. Whatever the precise assumption, an enormous gap would be certain to remain in a future war economy, even after the most severe tax effort.

Part II gives a brief evaluation of two rather extreme forms of wartime policy, one involving all-out reliance on direct controls, and one involving all-out reliance on restraint of inflation through taxation. The latter, obviously, is out of the question for incentive reasons; and indeed, no one ever favoured it. The former is rejected because freezing of the price system involves inefficiencies and—if combined with a loose financing policy—leads to excessive liquidity and postwar disturbance.

Part III outlines an alternative approach which is to avoid both the distortions of direct control and the bad incentive effects of excessive taxation. The backbone of the plan is a general scheme for rationing of consumer purchasing power. The scheme is to check inflation so completely that no direct wage, price and rationing controls will be needed in the civilian sector. Also, the plan provides for a severe policy of Treasury financing with tight restrictions on borrowing from banks, primary reliance on the sale of stable purchasing power bonds to consumers, and compulsory investment in illiquid securities where needed. Finally, the plan provides for controlling civilian investment by a mechanism somewhat similar to that of rationing consumer purchasing power. These main features are combined with various familiar reform proposals, such as the introduction of 100 per cent ceiling reserve requirements, the taxation of retained corporation earnings to the shareholder (in lieu of corporation and excess profits tax) and so forth.

This is an interesting and stimulating study, but I must dissent from important aspects of its findings. First, I do not think that the familiar World War II proposal for the general rationing of consumer expenditures (pretty though it is for seminar purposes) is a practicable proposal. Its all or nothing character, which excludes application by degree, surely renders this scheme ineligible, short of a full wartime situation. And even then, the complications (the unwieldy banking process) involved are such that they will hardly stand up under the dislocations of a World War III economy. In all, I do not think that this plan has the slightest chance of adoption. For this reason, I find it unfortunate that the authors have built their entire program around it and

have excluded (with what seems to me not very convincing arguments) the more modest but to my mind more realistic proposal for supplementary use of a spendings-tax (or spendings-compulsory investment) approach.

Second, I am most uncomfortable with the conclusion that price, rationing and wage controls will not be needed, simply because inflation is taken care of by the perfect working of general expenditure rationing. This it seems to me, is to solve the toughest part of the problem by assumption. What if this dream (or nightmare) of an "equilibrium war economy" should not work out, as would most certainly be the case? What then would happen to prices, wages and profits without provision for direct controls? To my mind, it is more constructive—albeit less heroic—to think in terms of a policy mix (including tax, general spending restraint and direct control measures) which would make the best of a disastrous situation, rather than to omit from the blueprint as superfluous important policy components which in case of all-out war would most certainly be needed.

To repeat, this is an interesting and stimulating study, but it has an all-or-nothing quality about it, and a rather light-hearted way of proposing a string of extreme measures, which suggests that a good deal of further thought is needed before it is adopted as a plan of action.

Richard A. Musgrave

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Price and Wage Controls. A Statement on National Policy by The Research and Policy Committee of the Committee for Economic Development. (New York: The Committee for Economic Development. 1951. Pp. 41.)

This December 1951 CED policy statement on Price and Wage Controls marks the first important advocacy in this country of the kind of general escalator, or share-the-inflation, mechanism which attracted attention in *The Economist's* "Age of Inflation" series last summer. The pamphlet does not seem to me to be as responsible a product as one ordinarily expects from CED, but at least it constitutes an interesting specimen for classroom dissection. And, at best, it represents some pioneering into the largely uncharted field of "long pull" price and wage policy—although its claim in this regard is shrouded in some obscurity as to the duration of the period to which the CED Research and Policy Committee intends its recommendations to apply.

Concluding that genuine "hold-the-line" price-wage programs are inappropriate or unworkable in a prolonged partial mobilization, the authors preempt the adjective "flexible" for a system of continuing and interacting cost-price escalation of business prices, farm prices, and wages—all three. "Flexibility," it must be noted, means maximum rigidity in the perpetuation of pre-Korean cost-price relationships. Thus—in all cases after three-month lags—business price ceilings would respond to changes in special, pre-Korean based and weighted, indexes of the prices of business cost items; farm prices at or above parity would be related to the prices-paid index; and wages would reflect changes in the consumers' price index (but, in the view of the majority of the Committee, they should not reflect increases in productivity). This system is offered as a substitute for the present "mixed" system of price-wage controls

(*i.e.*, partially "hold-the-line," partially "flexible"), which centers conceptually around the principle of limited cost absorption, particularly in the business pricing area.

The majority of the Committee, however, is not categorically opposed to all cost absorption, since it would distribute productivity gains by the rather curious device of having business absorb one-fifth of all approved wage increases. Unless my arithmetic is way off, to distribute an average annual productivity increment of 2½ or 3 per cent by this technique would require much swifter wage inflation than we have had since Korea; and this would presuppose an equally rapid cost-of-living inflation.

Aside from administrative considerations, the more obvious charges which CED would face if it pressed its current price-wage prescription are, first, that the dynamic properties of its policy contraption remain largely unknown—we have no real assurance that, in application, it would not turn out to be a spiral-accelerator instead of a spiral-dampener; and, second, that the proposal propagates the fallacy that prices and wages are perfectly symmetrical variables properly subject to perfectly symmetrical standards.

In addition, it would sin in the eyes of most practicing price controllers by trying to enshrine a particular historical cost-price pattern. Ironically, the authors seem to have been driven to this particularly rigid feature of their "flexible" scheme by a praiseworthy desire to find some durable, only moderately coercive, semi-control arrangement to meet the perhaps prolonged needs of the partial mobilization period. They want controls to set only the outer limits within which market forces can operate. And where the Invisible Hand does need assistance, the Committee, distrusting administrative discretion, wants to replace the Bureaucratic Hand with a Mechanical Hand—a gadget. But, like bureaucrats, and in contrast with the free market, this automaton cannot be a standard unto itself. Like bureaucratic price controllers so far, the only place the authors know to look for a basic principle of cost-price-profit propriety to guide their mechanism is backward. And because an automaton must be even more rigid in its application of a norm than a bureaucrat, the CED's mechanical hand seems to give way rather completely to the dead hand of the past.

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* The reviewer is a member of the Council of Economic Advisers' staff. His views do not necessarily reflect those of the Council or of other staff members of the agency.

The Struggle for Survival—A Chronicle of Economic Mobilization in World War II. By ELIOT JANEWAY. (New Haven: Yale University Press. 1951. Pp. v, 382. $5.00; textbook ed., $2.50.)

Although economists generally dropped "political economy" for "economics" as a descriptive title of the discipline late in the nineteenth century, there is nonetheless an obvious relationship between the political and the economic. The "Struggle for Survival" is a description of the impact of politics (as well as individual personalities) on our industrial mobilization efforts starting with 1939 and closing in 1943. Although the book does cover the remaining years

of the war, the author obviously feels not only that the major problems occurred in the earlier period but also that the solutions developed during these years were the ones that carried through to final victory.

Probably the best description of politics in mobilization economics in the United States is Janeway's "This book has attempted to explain the how of Roosevelt's greatness by telling the story of Roosevelt at his greatest—as War President and presiding genius over America's home front. The how of his greatness defies comparison as it will ever defy duplication" (p. 360). However, the story of Roosevelt is less the story of the man himself and more that of the World War II mobilization program starting with Stettinius, Harriman, Moulton, *et al.;* running through the personalities of the National Defense Advisory Commission, the Office of Production Management; into the War Production Board—Nelson, Wilson, Eberstadt; on into the Office of War Mobilization and Reconversion—Byrnes, Vinson; with heavy admixtures of Baruch, Stimson, and Forrestal throughout.

Janeway as Mobilization Specialist for *Time* and *Fortune* had access to these people and to the record to an extent permitted few other people. For this reason, his quarrels with the official publications like the Bureau of the Budget's "The United States at War" and private ones such as Donald Nelson's "Arsenal of Democracy" have a better than usual basis.

From the economist's point of view, the story is that of the lesson which Baruch learned in World War I, that is, there must be an over-all balancing of requirements and supply (p. 90), and the slowness and difficulty with which the various persons charged with the responsibilities of organization failed to adopt this view until late 1942 when Eberstadt's Controlled Materials Plan became official policy.

In fact, most of the first part of the book is an effort to tell the suppressed story of the War Resources Administration and its plan for organizing the economic war effort. Janeway attributes Roosevelt's rejection of the WRA plan to three causes: the identification of the Board with big business, Roosevelt's fear of creating an "Assistant President" who would likely be a rival to the President, and Roosevelt's admixture of admiration, distrust, and jealousy of "Dr. Facts," Bernard Baruch. In reality these three factors, changing the name from Baruch to that of other people who might have risen to equal positions of strength, is much of Janeway's explanation of the struggle. According to Janeway, Roosevelt was a very great man whose greatness rested largely upon his understanding of politics and his capacity as a politician. He identifies Roosevelt's admixture of politics and administration in the very early pages of the book when he says: "Nevertheless, to such a mercurial but prophetic figure as Roosevelt, who at the slightest provocation was ready and able to rise above both politics and principle, the American political system offers a standing invitation to operate a crisis presidency by the technique of pure democracy—by provoking participation from the people instead of by imposing discipline upon them, by manipulating the complications of the American political system and the American war economy to free instead of to frustrate the energies and the passions of the masses" (p. 4) and "If he

had relied on conventional methods of launching a mobilization program, he would have appointed a staff of emergency administrators and dealt with the people through them" (p. 6).

It probably is safe to assume that when Janeway was preparing the manuscript he was not only writing the history of an important period in American life, but also was preparing a memorandum to the President and to the administrators who would have to deal with economic mobilization if there were another war. In this sense, it was and is an important message. Fortunately for the country in our present stage of semi-war mobilization, the major lessons have been applied by fortuitous accident in the appointment of Charles E. Wilson and Manly Fleischmann for the principal rôles in our economic mobilization and the obvious desire and willingness of President Truman to make mobilization a professional rather than a political undertaking.

Fleischmann served his apprenticeship in World War II during the period of struggle and confusion which Janeway so eloquently describes. When called into a senior position shortly after the outbreak of hostilities in Korea, he was in a position to apply the lessons of ten years ago, and therefore not only picked up with the proper direction of policy but also recruited the "doers" of WPB days. Since July 1950 this combination has saved the country from much of the chaos of 1939-1943.

Wilson, also an alumnus of the same school of hard knocks, in his senior position was not only able to understand but also to abet and approve the policy and procedures which Fleischmann has formulated. Only by reading the "Struggle for Survival" and by attempting to reconstruct the economic chaos and difficulties which it describes are we able to fully appreciate the debt which we now owe these men.

In its 320 pages the book packages twelve extremely pungent and pointed chapters. It is a lesson in the reality of economics that all of us must recognize as the ultimate translation of economic ideas into worldly activities. The book concludes with an extremely well documented Bibliographical Note which brings together an excellent list of references for those who are interested in or must deal with the economics of industrial mobilization or planning either in war, semi-war, or peace.

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Price Policies in the Cigarette Industry. By William H. Nicholls. (Nashville: Vanderbilt University Press. 1951. Pp. xix, 444. $6.00.)

When the Tobacco Trust was dissolved in 1911, Louis D. Brandeis predicted that the dissolution plan adopted by the courts would "prevent, in large measure, competition among the four [principal successor] companies"; and that "the plan would result in four monopolies instead of one." The prophetic shrewdness of this prediction was demonstrated thirty-five years later when the Supreme Court, in May 1946, again found the sale of cigarettes and the purchase of leaf tobacco to be dominated by unlawful monopoly and con-

spiracy in restraint of trade. The more than 10,000 pages of court records on which this conviction was based is the subject of Professor Nicholls' painstaking and scholarly study.[1]

Professor Nicholls describes in detail (and documents statistically) the evolution of the cigarette oligopoly out of the dissolution decree of 1911. He shows that by August, 1923, any semblance of competitive price behavior had disappeared, since the three major firms moved to virtual list and net price identity. Each firm recognized the circular interdependence of its actions, because "no one of them could ignore the influence of its own price decisions upon the sales (hence price policies) of the other firms or, in turn, the influence of their resultant price policies upon its sales" (p. 172). Price cuts were matched with unfailing regularity, thus enabling the oligopolists correctly to anticipate a rival's reaction to price decreases. But before oligopolistic uncertainty could be eliminated there had to develop, and did develop, the "mutual recognition that one of the three firms was to act as price leader, particularly on price increases" (p. 175). This step was necesssary in order to take the "kink" out of the demand curve and thus assure each of the oligopolists that his rivals will not only match price reductions, but also follow price increases. While this acceptance of a price leader tended to deprive the other firms of initiative, the loss "was far more than offset by the gains in certainty as to the 'rules of the game' on price increases, which made greater joint profits possible" (p. 176).[2]

Given the pattern of tacit collusion with respect to selling prices, advertising competition remained as the only technique for the apportionment of sales among the major companies. This form of business rivalry had certain obvious advantages. It allocated sales among the Big Three without resort to collusive market sharing or any other recognized "fair" division of the cigarette market. It thus permitted the competitive game to remain "sufficiently uncertain to be interesting and exciting despite the rule that price competition was to be avoided" (p. 189). Moreover, advertising outlays could be (and were) made to serve as an important barrier to the entry of newcomers—a sort of protective tariff for the high aggregate profits of the established oligopolists. The result was that the cigarette industry, by 1950, had evolved into a differentiated oligopoly characterized by identical selling prices, huge advertising expenditures, difficult entry, and earnings for the Big Three which consistently were well above normal competitive levels.

Unfortunately, the government's recent antitrust action never faced the public policy problems posed by an industry in which concerted action and parallel behavior, both on the buying and selling side, produced the results (while avoiding the traditional illegal forms) of outright collusion. Since the Tobacco case of 1946 was a criminal proceeding, the only relief granted was a total of $255,000 in fines. While the Court's decision awarded the government

[1] For another recent study of the same court proceedings, see Richard B. Tennant, *The American Cigarette Industry* (New Haven, Yale University Press, 1950).

[2] Here it should be noted that Tennant believes the kinked demand curve to be still in force. See Tennant, *op. cit.*, p. 281. The only empirical evidence to support this contention, however, seems to be the fact that, since 1928, one of the ten attempted price increases among the Big Three was not followed by the rivals.

nothing more than a Pyrrhic victory, it was the source of understandable confusion and consternation among the defendants. As counsel for the tobacco companies rightly observed, the decision left them "entirely without guide as to how they may lawfully avoid . . . future Sherman Act violations against themselves, unless they cease business altogether" (p. 401). Moreover, as counsel aptly queried, "What are the specific policies and practices we must abandon, modify, or adopt in order to conduct our business according to law? . . . Is everything the appellants do illegal . . . if done by more than one of them?" (p. 402).

While neither the prosecution nor the courts provided an answer, Professor Nicholls does. He considers it fruitless to condemn "the natural, normal and intelligent consequences of an oligopolistic market structure" (p. 401), unless we stand prepared to change the basic pattern of the industry's organization which makes the condemned behavior almost inevitable. This, according to Nicholls (and in the opinion of the reviewer) can be done without injury to the public interest or the general welfare.[3]

In making his specific proposals for a structural reorganization of the industry, Professor Nicholls maintains that "dissolution is the only really effective remedy for oligopoly which lies within the limits of antitrust action *per se*" (p. 407); that any dissolution plan, in order to be effective, must be supplemented by an attack on the monopolistic aspects of advertising (p. 412); and, finally, that cigarette taxes must be reduced or, in so far as they continue, be placed on a graduated or straight *ad valorem* basis (p. 415).

Professor Nicholls has presented us with a well-reasoned, well-written, and thoroughly interesting chronicle of monopolistic price policies in the American cigarette industry. He has expertly applied economic theory to a concrete industrial pattern, and raised public policy questions which must be faced in other industries where differentiated oligopoly is entrenched. My only regret is—and this is the major shortcoming of the book—that Professor Nicholls has not chosen to outline his public policy recommendations, and the alternatives thereto, in greater detail.

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[3] This opinion is not unanimous, however, as is evidenced by Tennant's contention that "the present concentrated market structure yields better market results than would any alternative with the possible exception of full monopoly. . . ." See Tennant, *op. cit.*, p. 385.

Corporation Trust and Company: An Essay in Legal History. By C. A. Cooke. (Cambridge: Harvard University Press. 1951. Pp. 206. $3.00.)

The field of law sometimes has a connotation for the layman of being reactionary in influence and even a barrier to social progress. But Mr. Cooke takes the viewpoint that law reflects changes in society as it adjusts to them. To use one of his similes, the ceaseless tides of change beat upon the walls of social institutions and as pressures reshape the walls, the institutions become adapted to a new environment. In these modifications legal and economic institutions have a complementary relationship. In fact, they are obverse sides of one process. The law should establish justice formally; economics should establish justice materially. Taken at any one moment in time, each existing

legal and complementary economic system is static. But the forces of technical progress, and of changes in habits, customs and standards of life, disturb and remold this momentarily stable system.

Building upon these concepts developed in the thought-provoking first chapter, "Legal Form and Social Function," the author traces the blending of legal ideas and economic purposes, a mingling which produced the modern business corporation. This form of business enterprise arose from a combination of the joint stock company and the English borough corporation, each of which was originally a separate entity having no necessary connection with the other. By the process of complementary social adjustment of economics and law, the idea of the joint stock fund has become so interwoven with the idea of the corporation that the two are now believed inseparable.

The coalescing of these two entities is discussed in the body of the book. The development of the modern corporate form is traced in cases and statutes from the guild and the borough, through the dramatic struggle between common law and the Courts of Chancery to shape business forms, to the final triumph of equity in the Companies Acts of 1856 and 1862. By these Acts, what had once been the privilege granted by the sovereign became the right of the multitude. It is interesting to note that this right of general incorporation came to England about thirty years later than to the United States.

The book is replete with other stimulating ideas of which the following is an example. The author states that the importance of the introduction of double entry bookkeeping into the business world did not lie in its arithmetic but in its metaphysics. When the financier set up a capital fund separate from its subscribers but linked to them by debits and credits, he paralleled the lawyer's creation of a legal person, the corporation, similarly distinct from its members but linked to them by rights and duties. Such acts of lawyers and businessmen are revealed in the lines of development of borough corporation and joint stock company converging in the modern corporation.

The reader interested in the corporate form of business enterprise as well as in the broader relationship of law, economics and sociology, will find much material for thought and speculation in this book. For the legally minded reader there are full references and citations throughout the text to cases, Law Reporters and statutes.

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Public Utilities; Transportation; Communications

The Transportation Industries, 1889-1946. A Study of Output, Employment and Productivity. By Harold Barger. (New York: National Bureau of Economic Research. 1951. Pp. xvi, 288. $4.00.)

Professor Barger's analysis of nearly sixty years of transportation seeks to measure the volume of traffic handled by the different transport industries as well as the changes in employment and in output per worker. The study is concerned with those transportation agencies furnishing service for sale to

others. The transportation industries were selected for study largely on the basis of the availability of statistical data. The major transport industries—steam railways, electric railways, bus lines, trucking, pipe lines, waterways and airlines—reported nearly 2,000,000 workers in 1940, roughly 91 per cent of all transportation employment. The absence of data respecting private automobile travel and private trucking results in their exclusion from the transportation industries here studied.

Part I of the study covers the general aspects of commercial transportation. It shows shrinkage in the relative importance of transportation in the economy: whereas it produced a twelfth of the national income at the beginning of the period, transportation produced only one-fifteenth of the national income at the end of the period. However, the combined passenger and freight traffic of all commercial transport agencies increased five times in the years following 1889 and almost doubled again between 1939 and 1946.

Part II of the study traces the varying fortunes of the different transportation agencies. The newer forms of transportation—highway transport, airlines, and pipe lines—have shown large and sustained growth. Some of the older forms have declined, such as electric railways; and some have expanded slowly or contracted such as railways and waterways. One in particular responded significantly to a single category of traffic; petroleum production accounted for the growth of pipelines and the strong showing of coastwise shipping. However, in the aggregate, water transportation, just about held its own.

The scope of treatment afforded the different transportation industries is determined largely by the availability of statistical data. The steam railways receive the fullest study. Waterways are also discussed at some length. But the consideration given to electric railways, pipelines and airlines reflects the paucity of statistical materials and the brevity of their history. The character of the data relative to motor trucking places that important industry in an appendix.

Throughout the period, output per workers increased at an average annual rate of 2.2 per cent, a rate of gain exceeding that of manufacturing, agricultural or mining. The increase was more marked among the newer transportation industries.

The study offers new indexes of output, of employment and of output per worker for steam railroads, electric railways, pipelines, waterways and airways. The indexes are computed from traffic data (principally ton-miles and passenger-miles) and from the number of workers or man-hours. Much attention is given to the technical problems encountered in constructing these indexes, and an appendix treats the theoretical problem of measuring the psysical output of public utilities.

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Economics and Public Utilities. By ELI WINSTON CLEMENS. (New York: Appleton-Century-Crofts. 1950. Pp. xii, 765. $5.75.)

This book is designed primarily as a text for college courses in public utility economics and regulation. Any study of public utilities, and their

control must necessarily draw from economics, accounting, business, law, political science, and public administration. It is a very good topic, therefore, not only for the coordination of economic principles but for the integration of the principles developed in many of the social sciences. The matter of integration of these related disciplines is emphasized in this book owing particularly to the institutional approach which is adopted. The modern public utility commission is the product of economic forces, political pressures, laws, modes of thinking, and of statesmanlike leadership, and all of these are given appropriate attention in explaining the processes of regulation and in appraising the results. Despite the author's preoccupation with the whole problem, adequate attention is given to economic principles, especially in the theoretical analysis of such matters as price discrimination and public utility rates. Although to say that "perfect competition is not only unwise, it is a self-consuming anomaly that leads to monopoly and the breakdown of ethical social conduct," (p. 398) suggests a prejudice which it is difficult to reconcile with other statements in the book.

Some consideration is given to all the utilities traditionally covered in a text of this sort as well as the radio broadcasting industry. All the important topics relating to the management and regulation of public utilities are treated. These include, among others, public utility finance and accounting; valuation, depreciation, and rate of return; the theory and practice of public utility rate making; taxation; the public utility holding company; and regional public power projects. The exposition is logical and clear with topical outlines, subheadings, statistical tables, graphs, and chapter summaries to aid the reader in mastering the subject. For the student who wishes to pursue his study beyond the confines of the text is supplied a valuable bibliography some 60 pages in length. This contains nearly every published article or book relating to public utilities well classified and annotated.

What is the nature of the treatment and what are the general conclusions reached as regards the crucial and usually controversial issues in the field? In treating operating expenses and their control, an interesting innovation is the presentation of a comparison of the expense ratios of five types of utilities operating in Wisconsin. Such statistical comparisons, with due regard for their limitations, are being used increasingly as a tool of management and regulation. But except for the more flagrant abuses, reluctance on the part of regulatory authorities to interfere with managerial discretion has restrained the development of positive control of operating expenditures. Much more attention has been given to the problems of valuation, depreciation, and rate of return by regulatory bodies, and the author does likewise.

After reviewing the legal, theoretical, and administrative aspects of valuation of property for rate-making purposes, original cost is found to be "equitable in theory and relatively easy to determine" (p. 158). Adjustments in the rate of return are advocated as a means of achieving a desirable flexibility in the earnings with changing price levels. But in the excellent chapter on rate of return, where the author discusses the content and standards of a fair rate of return, he does not indicate when, or by what test, or in what degree alterations should be made to reflect price-level fluctuations. The author's suggested

plan for fixing a rate of return which will attract capital, based on the actual cost of debt capital and earnings-price ratios for the common equity and necessitating control of dividend policies and capital structures, does yield a variable rate of return on a prudent investment rate base. Perhaps such a result needs no further adjustment to assure a rate of return which will produce a satisfactory allocation of productive resources, but it is not indicated how such a variable return is correlated to changes in the cost of replacing utility plant. Incidentally, depreciation theory and practice are treated comprehensively not only in the chapter devoted exclusively to that topic but in other sections of the work. Depreciation policy is emphasized throughout owing both to its significance to ratepayers and investors and to its importance to the national economy and the problem of business fluctuations in particular.

A theory of rate making is formulated which provides for differential rates ranging down to the long-run marginal costs and yielding total revenues adequate to cover the total costs of rendering service. Marginal cost pricing is thus approved so far as the requirement that output be expanded to the point where marginal cost is equal to demand price. The total revenue under a schedule of discriminatory prices set by a regulatory body would cover all costs, however, thus avoiding the valid objection to marginal cost pricing that it seeks to utilize available plant without assuring returns which will attract private investment to utility industries. The rate-making techniques and practices peculiar to each utility are considered, with adequate attention given to recent innovations and the relation of public utility price-fixing to the same functions in the economy as a whole. One of the more interesting discussions concerns the thorny problem of regulating interstate natural gas rates, tied up as it is with economic philosophy, sectional economic interests, and conservation of a valuable natural resource. A satisfactory solution, in the judgment of the author, calls for an extension of federal regulation in this sphere.

The trend of the times in the utility industry is indicated by the inclusion of six chapters on public ownership. Among these are chapters relating to municipal ownership, rural electrification, the Tennessee Valley Authority, and other regional power projects. The critical evaluation of the regional project as an emerging institution in our economic life is discerning and eminently fair. It is recognized that the goals of multiple-purpose projects are beyond the power of achievement of single states and beyond the objectives of private enterprise. Only a planned control of river flow can yield the maximum power consistent with necessary flood protection and maximum benefits to navigation and land utilization. Cost allocations, on the other hand, are viewed as necessary administrative chores representing value judgments designed to justify rate policies already decided upon. Measuring the fairness of private utility rates by using regional project rates as a yardstick, based as they are upon arbitrary cost allocations and an inequality of tax burdens, is regarded as unfair and impracticable. The author sees the continued public development of water resources with the probability of the entire nation being covered eventually by a publicly owned grid system. Factors which will retard the progress of public power are distrust of government by the American public and a firm belief in private enterprise and competition. Professor

Clemens concludes that a vigorous and healthy privately owned utility industry is essential to provide a continuous competitive challenge and perhaps a yardstick to measure the actual performance of public projects.

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Land Economics; Agricultural Economics; Economic Geography

Economic Resources and Policies of the South. By CALVIN B. HOOVER and B. U. RATCHFORD. (New York: Macmillan. 1951. Pp. xxvii, 464. $5.50.)

In this book Professors Hoover and Ratchford have skillfully combined a wealth of factual information on the structure of the southern economy with careful analysis of federal and regional policies affecting the utilization of resources, industrialization, and other basic problems of the region. In addition, they present the alternative policies which might be followed and discuss the pros and cons of such alternatives. The book grew out of the studies undertaken by the authors for the Committee of the South of the National Planning Association, and some parts of it originally appeared under the title *The Impact of Federal Policies on the Economy of the South.* In addition, in the sections devoted to policies for industrial development the authors have drawn extensively from McLaughlin and Robock, *Why Industry Moves South.*[1]

The primary purpose of this much enlarged study is to examine, explain, and suggest remedies for the relative poverty of the thirteen states the authors define as comprising the southern region. The first nine chapters are devoted to the structure of the region with separate chapters covering: physical resources, human resources, income, barriers to economic development, recent agricultural development, the changing structure of industry, some major southern industries, financial resources, and trends in public finance. The remaining eight chapters are devoted to past and present policies with respect to natural resources, forest resources, agriculture, industry, labor, and international trade.

This work represents an important contribution to the empirical analysis of regional economies. In it the authors have skillfully blended a veritable wealth of statistical and other factual materials with a thorough and shrewd commentary upon policies, past, present, and possible for meeting and solving the problems of the most widely discussed region in the United States. Not only should this analysis prove helpful to those who are interested primarily in the southern region, but there should be much to interest those concerned with the broader problem of the underdeveloped area wherever found.

The theme of the first nine chapters analyzing the structure of the southern economy is that the low level of southern income relative to the non-south is not due to any of the popular explanations but rather is due to the high rate of increase of the rural southern population, the heavy emphasis on one-crop agriculture, the lack of agricultural machinery, the poor quality of southern

[1] Both of these works were reviewed by Earle L. Rauber, *Am. Econ. Rev.*, Vol. XL, No. 5, Pt. 1 (Dec., 1950), pp. 971-74.

soils, inadequate marketing practices, the unfavorable terms of trade, and the presence of many low index industries. If these causes are accepted as adequate, and those of us who live in the south can certainly agree that they are, then the relative improvement which has taken place since 1929 must be exhibited through the same factors. This the authors demonstrate has been the case. They also stress the rôle played by larger federal income payments into the region in recent years.

In the last eight chapters devoted to policy the theme is continued; improvement in mining, forestry, and agriculture are all essential to rising income levels, but the ultimate solution is to be found, the authors contend, only in further, selective industrial development, particularly of high index industries. A most interesting chapter on "Policies for Industrial Development" does much to dispel popular notions, much favored by Chambers of Commerce and State Development Commissions, on how to win friends and attract new plants. So far as federal policy is concerned, the authors feel that it will have played its rôle if it keeps the American economy as a whole operating at high and expanding levels of employment.

The reviewer has used this volume as a basic text for a course in the southern region and found that it provided the essential background for students who, even though life-long residents of the area, are not well informed as to the facts concerning the region. The book was an excellent basis for starting analysis of specific regional problems; it is to be hoped that others will profit from the splendid job done by Hoover and Ratchford and that it will stimulate others to produce similar case studies of narrower sectors of the region.

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Interregional Competition in Agriculture—with Special Reference to Dairy Farming in the Lake States and New England. By RONALD L. MIGHELL and JOHN D. BLACK. (Cambridge: Harvard University Press. 1951. Pp. xiv, 314. $5.00.)

Interregional competition falls within the theoretical framework of the principle of comparative advantage. This volume is a group of related case studies applied to two general regions with respect to trade in dairy products. This arrangement has the advantage of narrowing the field to proportions that may be appraised and measured statistically. The outstanding contribution is that of methodology. The authors go to some lengths in discussing the purely theoretical aspects of their problems. But the main emphasis is given over to a consideration of methods; not only the mthods used, but the approaches that might have been used—their advantages, weaknesses, and in some cases their total inadequacies. The authors set out to develop a method that may serve to answer, in advance, the very significant and practical question: If prices for milk and its products increase or decrease more than the prices for other farm products, what will be the effects upon farmers' responses in the Lake States and in New England?

The method used for predicting the production responses of farmers was that of "budgeting," that is, in these studies, estimating farm receipts and

expenditures on the basis of several alternatives open to the individual farmer. On the basis of these alternatives, estimates were made as to the most profitable course of action for each farmer for the next 10 years, if (1) milk prices remained at present levels (1936), (2) were to increase by a given percentage, relative to other farm products and (3) were to decrease by a given percentage relative to other farm products. These forward estimates are more significant for longer-run situations. It is for this reason that the period of ten years was chosen.

After the lapse of the ten-year period, the areas were surveyed again for the purpose of checking the predictions with what actually happened—the acid test all too seldom applied. Thus the authors are able to evaluate the strong and weak points of their methods of operation.

As is to be expected, the forward estimates correspond more closely with actual results in some areas than in others. The authors feel that departures can be explained on reasonable grounds.

Since farms in six lake state areas and in five New England areas were chosen for budgeting, the substantial amount of field work involved is readily apparent. These area studies were conducted by the Interregional Competition Section of the Division of Farm Management and Costs, Bureau of Agricultural Economics. It is safe to assume that they were coordinated under the direction of Mr. Mighell who is in charge of the section.

The reader will be impressed by the necessity for value judgments in heaping measure in almost every step of the planning and execution of the studies, in the selection of the areas, in the selection of farms within the area, in the budgeting and in the estimating of responses of consumers under varying conditions. The demand schedules lack the painstaking body of statistics supporting the supply schedules.

The questions arising in the field of interregional competition are pressing and real. Their answers are of high economic significance. The authors of this volume have cleared a road that will greatly facilitate travel by those who attempt to supply these answers.

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Coffee, Tea and Cocoa—An Economic and Political Analysis. By V. D. Wickizer. A publication of the Food Research Institute, Stanford, California. (Stanford: Stanford University Press. 1951. Pp. xiii, 497. $5.00.)

Dr. Wickizer's study has a considerably wider coverage than would be expected from the announcement that it is one (and the first to appear) of a group of studies to be issued by the Food Research Institute on food, agriculture and World War II. Although national and international controls provide the central theme, information is also provided on the history, production, consumption and trade of the three commodities listed in the title. Some of the material contained in the author's earlier writings[1] is repeated here, enriched and brought up to date, but the reader is referred to the earlier volumes

[1] *E.g., The World Coffee Economy* (Stanford, 1943) and *Tea Under International Regulation* (Stanford, 1944).

for details of the prewar control schemes. Dr. Wickizer has produced an outstanding work that will be indispensable to persons interested in these products as well as to students of international commodity control problems. Parts I, II, and III, on coffee, tea and cocoa, respectively, comprise the larger part of the volume, but there is a pithy general introductory chapter, and Part IV, Trends and Problems, provides some comparative analysis of production, consumption and control problems.

Although Dr. Wickizer is skeptical of the alleged virtues of both national and international regulation of trade, his attitude is basically pragmatic. He is sympathetic to international tea regulation because he finds that it has been operated in a "mature" and reasonable manner. In the absence of any international agreement in the cocoa industry, he confines his comments largely to the marketing boards, especially in West Africa. He feels that the "world shortage of cocoa may disappear sooner than is now anticipated" (p. 444), and concludes that a world cocoa monopoly is "an unlikely prospect" (p. 422).

He saves most of his criticism for the coffee producers, especially those in South America. These criticisms fall into two main groups—one, the boom-price psychology of the Latin American coffee producers in general and what Dr. Wickizer calls the "maneuvering and propaganda" (p. 150) to achieve high prices, and, secondly, Brazilian coffee controls, which the author blames for the over-production of the 1930's and the alleged "backwardness" of the Brazilian coffee industry. It is felt that Dr. Wickizer has somewhat overstated his case. He is doubtless on firm ground in pointing out the danger of "exaggerated" prices that stimulate planting in marginal areas, encourage speculation, and create consumer resistance. By way of contrast, Dr. Wickizer cites the wisdom of the tea-producers in their efforts to reduce costs and to maintain prices at reasonable levels, but a more valid comparison might have been with price-support measures in the United States and Europe. In his earlier books Dr. Wickizer developed the reasons why tea lends itself more readily to regulation than coffee. For one thing, the tea industry has a "colonial" character, whereas coffee production in the Western Hemisphere is in the hands of native growers, including thousands of small farmers. Dr. Wickizer recognizes that recent political changes in India, Ceylon and Indonesia are having repercussions on the tea trade.

As regards Brazil, Dr. Wickizer's zeal to make a case against "valorization" has led him into several dubious generalizations. He may be right in his conclusion that temporary "abnormal profits" brought about by coffee "defense" have been more than offset by the loss of part of the world market and by other adverse effects, but he probably exaggerates the influence of government intervention on the evolution of the coffee industry. In several places he speaks of "subsidization" of the coffee industry, a term that is not clearly explained. He blames the control experiments of the 1920's for the "excessive world coffee supplies that persisted throughout the 1930's" (p. 20) without any allowance for other factors, such as the depression that affected most activities during the early 'thirties. His treatment minimizes, if it does not ignore, the influence of low prices during the 1930's and the early 1940's on

the present situation. Dr. Wickizer dwells on the "backwardness" of the Brazilian coffee industry and its "exploitative" character. It is true that the industry has been conducted on an extensive basis, just as a large part of United States agriculture has been extensive in the past, and for much the same reasons. The methods of growing and processing coffee have been evolved by trial and error to meet the particular conditions of time and place. Rising costs and new competition may impose further changes. Dr. Wickizer mentions some of the experiments now under way, but does not give adequate recognition to the work of the São Paulo State Institute at Campinas on genetics, which is now bearing fruit, nor to the planters' adaptation to changing conditions through fertilizing, irrigation, erosion control and mechanization. One of the largest planters in São Paulo maintains his estates at an efficient level of productivity by systematic replacing of exhausted trees and through the use of manure obtained by a policy of stocking three hectares of grazing land to each hectare planted to coffee.

Dr. Wickizer recognizes that the annual variations in the size of coffee crops create a problem, and he sees some "merit in and hope for limited-purpose agreements" (p. 418, note 7). But apparently his hope is that the diffusion of coffee culture to new areas will tend to regularize the flow. He states that "the long-term trend in production may be away from the Western Hemisphere" (p. 20), but it is still "may be."

Although there is room for difference of opinion or of emphasis on various points raised by Dr. Wickizer, he has written a study that will doubtless receive the wide attention that it deserves.

George Wythe

Washington, D.C.

World Resources and Industries. A Functional Appraisal of the Availability of Agricultural and Industrial Materials. By Erich W. Zimmerman. Rev. ed. (New York: Harper & Bros. 1951. Pp. xvi, 832. $7.50.)

When the first edition of this book appeared in 1933, it revealed that the author was concerned with asking different questions than were most economic geographers. He asked how people could be led to develop broad social consciousness and understanding of the interdependence of social forces in the modern world. He was not concerned with training people for careers in foreign trade or business management. He did not want to focus attention upon facts regarding the amount and distribution of resources and industries. Instead, he wanted to ask, "Why are today's forms of economic life what they are?" and "What are the trends?" and "What significance do they have for those who want to leave the world improved by their having lived in it?"

In the years that have followed, he has become even more convinced that fundamental principles should be emphasized more than statistical data. The revised edition brings no revision in outlook, but rather a determined effort to present more fully and more clearly his functional approach to resources. This has led to much rewriting and a 25 per cent expansion in volume. The factual data underlying the argument are brought up to date with only a very few omissions, *e.g.*, "the average expectancy of life in this country at present is between 50 and 60" (p. 67).

Some illustrations from the revised edition will help to clarify the author's approach and viewpoint. Natural resources are not static, but dynamic. As objects they are important only as human beings and human culture make them so. They exist unaided, but they do not function except as people use them. The obvious exceptions of storm, sunshine, and falling water do not invalidate the rule. And preoccupation with natural resources tends to obscure extremely important human and cultural resources. Coal may be unmined carbon. But it is also, and more significantly, a fuel in our stoves, a smelting agent for iron ore, a commodity of commerce, a producer of electricity through the use of man-made boilers, turbines, and generators. "The word 'resource' does not refer to a thing or a substance, but to functions which a thing or substance may perform . . . such as satisfying a want. In other words, the word 'resource' is an abstraction reflecting human appraisal" (p. 7) of the human usefulness of something. This appraisal changes as man's wants change, as technology changes, as nations go to war or remain at peace. "Man's own wisdom is his premier resource—the key resource that unlocks the universe."

The opposite of "resources" are "resistances." These also are both natural and cultural. They are so much a part of our world that their familiarity often causes us to overlook their importance: distance, gravity (sometimes also a resource), friction, chemical stability, difficulties of learning and teaching—even the stubbornness of men. Surrounding resources and resistances is "neutral stuff." This too is dynamic. Ore that is too lean or too complex to be useful today may change tomorrow from neutral stuff to a resource as metallurgy develops or a war cuts off customary sources of supply from richer or simpler ore bodies. Or new synthetics may be so much cheaper than former natural products that the latter cease to have market value sufficient to warrant their exploitation.

Dr. Zimmerman makes every effort to clarify difficult relationships. But he does not minimize their complexity. Nor does he omit a topic merely because it might be "over the heads" of the college students to whom this volume is addressed. He would rather force them to strain to get his meaning than to talk down to them. As a result, the first section of 143 pages devoted to a general study of resources is not always easy reading. It presents the abstractions that the author illustrates in the main body of the book which follows with its 200 pages on the resources of agriculture and nearly 500 pages on the resources of industry. But it also summarizes vital relationships so well that some teachers will surely want to take their students through it a second time, at the end of the course after their horizons have been widened by the studies of particular resources in action.

Perhaps more attention (200 pages) is given to energy resources than in many other books in this field. There are three introductory chapters on the social significance of energy, particularly the mechanical revolution which has changed human history so greatly through its mobilization of inanimate energy in the service of mankind. Exceptions and differences in degree are admitted, but not developed as much as this reviewer would have liked. An attempt to contrast the permanence and security of a "vegetable civilization" with the insecurity of machine civilization seems a bit superficial. The author is almost rhapsodic in his description of the blessings of the use of inanimate

energy. The troubles of today, he tells us, "are largely brought on by machines, but they are not the necessary results of inanimate energy" (p. 73).

The vital importance of inanimate energy in the author's mind is emphasized again at the end of the book. After an excellent chapter on "the delicate and complex problem of conservation," Zimmerman concludes his volume with a discussion of resource adequacy. He disposes of the neo-Malthusian pessimism of Osborn and Vogt by invoking the genii of industry. These magicians will not only contribute much to per capita productivity in agriculture through more and better agricultural equipment, improved transportation facilities, cheaper fertilizers, and greater reclamation projects. They will also raise the level of living and thus generate "the psychological forces which alone can call a halt to the 'torrent of babies'" (p. 816). But these genii depend upon the continued abundance of inanimate energy. Mineral fuels are limited. Therefore Zimmerman sounds his final warning: "If by the time the present sources of . . . fossil fuels are exhausted, nuclear energy and other new forms of inanimate energy have not been developed . . . civilization as we now know it will come to an end anyway, regardless of . . . factors determining the food supply" (p. 818).

R. B. Pettengill

Pasadena, California

Labor

Labor and Industrial Relations—A General Analysis. By Richard A. Lester. (New York: Macmillan. 1951. Pp. x, 413. $4.25.)

In this textbook, Professor Lester attempts to "integrate the whole field of industrial relations," which, as he defines it, includes not only the dealings between labor organizations and industrial management but also all aspects of labor in the American economy, including governmental action and the interrelationships among workers, unions and management." What gives the book unity and makes its chapters something more than a discussion of disparate problems, is its basic concern with the "human relations in American industry." The author quotes J. M. Clark: "The most important product of industry is what it does to lives of the people who work in it."

But wage-earners are not the only people who work in industry, and the book is as much concerned with the humans that make up managements and their organizations as it is with workers and unions. And, since the practices and policies of both create problems not only for each other, but for those who make up the public, governmental policies protecting and controlling both workers and managements are given equal treatment. Relationships being the primary subject of the volume, however, it treats the problems growing out of employment in modern industry not in their economic aspects alone or chiefly, but rather subordinates these and emphasizes the psychological, political and social factors. "What workers or managements believe or fear may be more pertinent to the solution of a labor problem than statistical facts or logical economic reasoning. The various social sciences . . . all are needed for a full understanding of human relations in American industry."

The influence of the most recent research in the field is apparent not only in the author's point of view, but throughout the volume its findings and conclusions are woven into the discussion of specific problems. The contributions resulting from the empirical investigations of psychologists, social anthropologists, and labor economists are especially evident. The effect of this influence on the contents of the volume may be seen more clearly, perhaps, by comparing the present work with the author's earlier textbook published about ten years ago.

Its title was the *Economics of Labor*, and half its contents was devoted to discussion of "Labor's Economic Problems." The rest of the volume dealt with union organizations and collective bargaining (referred to as Labor Relations), with economic analysis of the problems, and evaluation of the practices and policies of the unions in terms of their economic effects. Its primary concern was with the workers and how they tried to improve their lot through organization and collective bargaining.

The new text does not neglect economic or statistical analysis, but points out their limitations and uses them in conjunction with the methods of inquiry of the other social sciences. It begins with a description of the "tools and methods of research" appropriate to industrial relations, and proceeds to a discussion titled "Understanding Workers and Managements" in which attitudes, beliefs, prejudices of both are examined, and how they express themselves in the policies of unions and management organizations. Then the Market Mechanism in Industrial Relations is analyzed to show not only the differences between commodity and labor markets which economists have long recognized, but the non-economic factors which upset it as a regulating device. Following this, two chapters analyze the Structure of Wages and the Use of Human Resources. This constitutes Part I of the book—"Analytical Foundations."

Part II deals with "Unions, Management, and Collective Bargaining" and the significant change here is the equally detailed treatment of management's and labor's problems whereas the earlier volume was little concerned with labor management. Chapters on Management Theory and Practice and Management's Labor Policies are juxtaposed with chapters on Union Policies and Practices and Union Structure and Government. The difference in viewpoints and goals of the parties are explained, the diversity in union-management relations is pointed up by reviewing collective bargaining experience in a number of industries, and the final chapter in this Part discusses factors that make for good labor relations.

Part III, rather awkwardly titled "Issues and Government Intervention," covers the public interest in industrial relations. It is highlighted by a penetrating examination of the labor monopoly issue. Other subjects covered are development of public policy in relation to labor and management, Social Security Measures, the Labor Relations Acts, the government's mediatory devices for adjusting disputes, Wage and Hour Legislation, and National Wage Policy and Full Employment with particular reference to economic mobilization to meet emergencies. Part IV—"Concluding Comments" is a brief restatement of the author's basic ideas in the perspective of a world

dominated by the clash between "Communist dictatorship and enterprise democracy."

It is regrettable that Professor Lester saw fit to limit this work to half the size of his earlier book. For many of the subjects dealing with the relations of government to both management and labor are skimpily treated, and the basic approach of the author is not carried through as well in these discussions as in Parts I and II. The limited space may also be responsible for the tendency to be content with brief statements of the conclusions drawn from recent research without setting forth enough facts to indicate how they are justified.

WM. M. LEISERSON

Washington, D.C.

The House of Labor—Internal Operations of American Unions. By J. B. S. HARDMAN and M. F. NEUFELD, editors. Prepared under the auspices of the Inter-Union Institute. (New York: Prentice-Hall. 1951. Pp. xviii, 555. $5.75.)

The State Department and the Economic Cooperation Administration have brought many trade unionists from European countries to the United States to study the American labor movement and American industry. Many of these men and women, when seen toward the end of their stay, have seemed to be in a state of mental surfeit. They have been through a maelstrom of impressions. Their visits to factories, their long trips across our vast country, interviews with labor leaders, contacts with lecturers on American labor, overwhelm them. Their impressions are exciting and kaleidoscopic. They return to their native countries with many worthwhile experiences but no real integration of these experiences. In some respects, *The House of Labor*, edited by J. B. Hardman and Maurice F. Neufeld, leaves the reader with the same breathless feeling that the European visitors must have. So many facets of American labor—so many activities—so much vitality—so many unsolved problems—is there no central core to the labor movement which can provide a key of understanding?

The purpose of the book as outlined by Mr. Hardman in the Introduction is "to depict the broad, over-all sense or motivation of unionism," "to familiarize leaders with the organizational anatomy of unionism," and thirdly, "to present a collective portraiture of the leadership of labor unionism." Because Mr. Hardman has been a student of the dynamics of organized labor for many years, he has a strong historical orientation and is extremely sensitive to the interaction of social and political forces with this great social movement. Both he and Mr. Neufeld have gathered together some forty contributors who are not theoreticians but who have had day-to-day contact with the activities, problems, and personalities in the American trade union movement. The result is an encyclopedic analysis of labor's structural organization, its political activity, its union communications, its research in engineering programs, its health, welfare, and community services, its educational services, topped off with an analysis of the economic and psychological problems of the union staff. This is no mean undertaking! For the labor movement is but a microcosm in a larger macrocosm. Were it not for the excellent transition paragraphs

which both Mr. Hardman and Dr. Neufeld have written, one might feel the lack of integration more keenly. As it is, this reviewer believes that too much emphasis has been given to some problems such as labor in politics and labor education, and not enough to others even more demanding of thoughtful consideration, such as the protection of the right of the worker to dissent, and the consideration of human relations problems within the union.

There is little consideration in the book of the position of the individual worker as a citizen of the union. Over the years, grievance procedures and avenues of redress for the worker as an employee have been evolved. The avenues of redress for the worker as a member of the union have not yet been considered either by labor leadership or by membership. Must a trade union member vote for the political party espoused by his leadership? Can the rank and file member criticize union policy without being accused of heresy? A self-regulatory policy would, of course, be ideal but self-regulation either in industry or in trade union organization, is still far from being realized. Taft-Hartley legislation may regulate union practices, but it is a moot question whether the individual worker has an opportunity to become more mature and more responsible under such legislation.

The analysis prepared by C. Wright Mills and Helen S. Dinerman on the leaders of the unions, their education, their age, their national origins shows the qualitative differences between the A. F. of L. and the C. I. O. The majority of C. I. O. leaders who are in the younger age brackets believe that the trade unions have a long-range program. The A. F. of L. leaders do not think of their program in broad objectives, but rather in day-to-day goals. The fact that C. I. O. leadership believes that business is far stronger than labor, and that A. F. of L. leadership believes there is a more equitable matching of power between labor and business, is but a reflection of the types of industries the two federations negotiate with. The C. I. O. unions do negotiate with the industrial giants of our country—and C. I. O. leadership does not always feel like David!

One of the most provocative essays, written by Dr. Neufeld on "The Light that Fails," evaluates the contributions of some of the previous writers on the relation between labor leaders and labor experts. Dr. Neufeld points out that just as labor leaders have been called upon to act in one era while bound to the loyalties, customs, and frustrations of a dying one, so labor experts, the technicians, the journalist, the research worker, the engineer, are trained in the ways of new techniques but function under the shadows of the old. He discusses with insight the psychology of the labor leader, his notion of infallibility and superiority which makes him distrust the expert whom he hires and needs. The labor leader was too long a representative of a minority group in our society. He has a long memory in the world of industrial conflict. If he achieved success for himself and his union, it would seem to him to be in spite of the intellectuals rather than because of them! William Leiserson also posed some pertinent questions on the rôle of the intellectual in the union movement "Is he to lead or to serve?"

The House of Labor should be studied by every student of group action and group psychology as well as industrial relations. It does not point the

way of social orientation—but it teems with vitality and provocative challenge as well as information, furnished not by theoreticians but by practitioners.

THERESA WOLFSON

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Labor Productivity Functions in Meat Packing. By WILLIAM H. NICHOLLS. (Chicago: University of Chicago Press. 1948. Pp. xvii, 256. $5.00.)

Although labor economists have made extensive use of statistics on an empirical and analytical level, they have generally ignored even the simplest theoretical models developed by the econometricians. During the 1945 General Motors dispute, the UAW-CIO Research Department prepared for the Presidential Fact-Finding Board a brief which utilized multiple correlation equations to justify a wage increase without a corresponding price increase, but it had negligible effect upon the thinking of the Board or upon the outcome of the dispute. The National Bureau of Economic Research volume, *Cost Behavior and Price Policy,* which suggested a number of fruitful areas for research in similar terms, has likewise failed to stimulate any appreciable number of labor studies. This general neglect of econometrical methods in the area of labor economics is explainable, at least in part, by two factors: the inadequacy of the mathematical-statistical training of most labor economists, and the econometricians' lack of interest and sophistication in labor problems. Whether econometrics has anything worthwhile to contribute to labor economics is therefore still an open question.

Professor Nicholls' study of the relations between physical output, employees, man-hours, and payrolls in a Midwest meat-packing plant illustrates both the possibilities and difficulties. Nicholls states that the main purpose of his study was to make a "limited but significant" contribution to the economic theory of the firm, particularly with respect to the optimum combinations of men and hours for given (constant) levels of output. He attempts this by fitting a series of least-squares, multiple-regression equations (in both arithmetic and logarithmic terms) representing a number of theoretical models (*e.g.*, diminishing, increasing, and constant productivity and costs) to seven sets of data based on departments and shifts in the years 1938-39 and 1939-40. In contrast to previous studies, he has deliberately eliminated from the analysis the factor of overhead cost. On the other hand, he has separated the two main elements of man-hours—number of workers, and hours per worker—for purposes of a more refined analysis.

From this analysis, Nicholls concludes:

1. The hypothesis of diminishing productivity with successive additions of men and hours is satisfied, for the most part, by the "most general arithmetic functions," but not by the "logarithmic functions." The inconsistency is explained by the conjecture that "the departures from linearity are sufficiently slight so that regressions of convex and concave curvature describe the data about equally well."

2. Thus, "plant officials were rather successful in combining men and hours so as to avoid sharply diminishing productivity, particularly of total man-hours."

3. But, "the number of men employed was larger and the work-week shorter

than those levels which would have minimized labor costs for any given output."

Had Nicholls stopped here, he would have simply added another interesting theoretical-empirical cost-output study to the earlier contributions of Dean, Yntema, and others. But he goes on, in effect, to challenge the labor economist by suggesting that the approach which he has used may have important implications for such major labor relations policies as the Fair Labor Standards Act and the guaranteed annual wage.

The discussion at this point is further revealing of the limitations of the econometrical approach, most notably the small number of variables which can be treated statistically and the over-simplification of assumptions. On the basis of his analysis, Nicholls concludes, as noted above, that men and hours were combined at a level above minimum labor costs for given out-puts. However, he quickly adds that practical (institutional) barriers interfered with the optimum combination of men and hours—*e.g.*, the impracticability of varying the number of men strictly on a week-to-week basis, the need to maintain an experienced and satisfied labor force, and the importance of having a reserve of manpower on hand. "All things considered, therefore, it may well be that the plant was operating at labor costs which were at a *practicable* minimum" . . . *although* "there are some grounds for belief that the substitution of men for hours was carried too far."

Nicholls then asserts that the hours provisions of the Fair Labor Standards Act were applied to the meat industry with an insufficient appreciation of its technology and employment (weekly and seasonal) problems. However, he believes that it is too late to do anything about it and suggests instead that management explore further the feasibility of the guaranteed annual wage plan which has already been used successfully in some meat-packing plants and which would permit greater flexibility in the use of the work force. He offers a rough illustration ("The crudity of these estimates cannot be too much emphasized.") of how to analyze the economic feasibility of annual wage guarantees. Ironically, the results of this illustration argue against a wage guarantee, but again the analysis is severely hampered by the omission of numerous important variables, such as the effect of a guarantee plan upon productivity, which the author himself recognizes.

Despite the limitations of the econometric approach, Professor Nicholls has performed an extremely valuable function in suggesting its potentialities for research in labor economics. His work merits some sequels, and his specific suggestions on the guaranteed annual wage question might well be followed up. In his emphasis on minimum labor *costs*, he provides an interesting supplement to the much more broadly conceived but primarily *income* oriented approach of, say, Murray W. Latimer.

It should be noted, in conclusion, that Professor Nicholls' monograph is a model presentation from a methodological standpoint. He has spelled out in detail his assumptions, hypotheses, and methodology, has provided a careful analysis of the limitations of his tools and data, has presented his data in clear and concise fashion, and has related his conclusions directly to his data.

MILTON DERBER

University of Illinois

Population; Social Welfare and Living Standards

The Malthusian Controversy. By KENNETH SMITH. (London: Routledge & Kegan Paul. 1951. Pp. vii, 350. 30 *s*.)

"Malthus and his Contemporary Critics" would be a more descriptive title for this interesting and valuable book. It presents briefly the views of Malthus and nearly a score of writers who attacked him between 1798, when he published the first edition of his *Essay on the Principle of Population*, and 1834, when he died.

The interest in these writings is by no means only antiquarian. As the author points out, the controversy over the social and economic implications of population growth did not die with Malthus. His famous ratios—the geometrical increase of population and arithmetical increase of food—have long since been put on the shelf with such other curiosities as the "wages fund," but the thesis that excessive population growth may hinder social progress is debated more hotly than ever. The debate at present refers mostly to the "under-developed countries," many of which are in a situation not radically different from that of Malthus' England. The issues are birth control and technical assistance instead of "moral restraint" and the Poor Law, and statistics have replaced much of the earlier speculation about the growth of population and production. Yet some of the arguments of Malthus and his critics, and even of his eighteenth-century precursors, find remarkably close counterparts in the writings of modern demographers and of present-day prophets like Vogt and Mather.

The main thing in the book is a series of concise summaries and selected quotations from various editions of the *Essay* and other works of Malthus and from the writings of the contemporary critics, including Hall, Jarrold, Hazlitt, Gray, Weyland, Grahame, Godwin, Booth, Ravenstone, Place, Everett, Thompson, Senior, Sadler, Edmonds, and Lloyd. These materials are presented in chronological order in such a way as to show how Malthus' pronouncements stimulated the development of demography and to what extent his thinking was influenced by the work of the critics and the course of events. The author is skillful in demonstrating the relationship of Malthus' popularity and his critics' relative obscurity, to the political and economic conditions of the time. In Malthus he sees the defender of private property at a time when that institution had been threatened across the English Channel, and the apostle of the existing social order at a time when the social problems created by the industrial revolution were giving cause for doubts as to its justice. Thus he explains the enormous success of a work which, as he shows clearly, was hardly original and at many points transparently weak.

The summaries of the critics' works are a boon to any reader who is interested in the development of thought in this field but who lacks ready access to the originals or the leisure to study them. Your reviewer belongs to that class of readers and is therefore in a poor position to comment on the sufficiency of the summaries. At least they are admirably brief and lucid.

After the summaries there is a "critical analysis," or rather a demolition, of the main points in Malthus' theory, his illustrations and proofs, and the

applications of his doctrine to questions of the perfectibility of society, wages, the Poor Law, emigration, and birth control. Here the best arguments of the critics are brought to focus on each point and effectively supplemented by the author's own remarks. Little enough of Malthus' argument is left standing, but the author would have to do much more than destroy that argument in order to support some of his own conclusions, for example: "A growing population, instead of being a thing to deplore, is a sign that, for the time being at all events, conditions are easier and health is better. . . . Generalizing in this field is dangerous, but all things considered, a growing population is a good rather than a bad sign" (p. 330).

Although the plan of the book makes a considerable amount of repetition unavoidable, the author's easy style and his ability to present the nub of an argument in a few words save it from becoming dull. It is too bad that not all scholarly works in economics and the other social sciences are so easy to read.

JOHN D. DURAND

New York, N.Y.

Population on the Loose. By ELMER PENDELL. (New York: Wilfred Funk. 1951. Pp. xxiii, 398. $3.75.)

This is an angry, shrill, and distorted book, expressing some rather simple and not very original positions on some genuine problems.

The author's demography is quaint, although the references are modern. Pendell is concerned about the general supply of population (it is generally too high) and about its quality per unit (it is generally too low). Of the fifteen chapters with aggressively jocular titles, approximately half, in no particular order, are devoted to each theme.

About the quantitative supply of population, Pendell adopts an essentially neo-Malthusian position. That is, he argues that reproduction can always endanger the means of subsistence, and that in large areas of the world the danger is real. The author correctly points out some of the problems posed by the lag between falling death rates and falling birth rates in the process of modernization. He also correctly notes that the achievement of some sort of balance in the oldest industrial countries was accomplished under much more favorable circumstances than prevail in densely settled agrarian regions of the modern world. However, very little attention is given to some circumstances that would make this cry of alarm even more persuasive—for example, the way in which modern techniques may reduce death rates without setting in train the social revolutions necessary to change attitudes and practices relating to fertility.

With regard to the population-resources ratio, at least it may be said for Pendell that he does not follow one of his favorite sources—William Vogt's *Road to Survival*—to the point that we are overpopulated everywhere because man has displaced some flora and fauna and thus upset the natural order of things. Our author sheds no misanthropic naturalist's tears for extinct species of caterpillars.

On the question of population quality, Pendell is even more assertive because his evidence is scanty, mixed, and ambiguous in its legitimate interpretation. He is not content to argue that the *social* quality of population suffers if persons best able to provide a healthful and "cultured" environment for their young fail to keep pace with the breeding practices of the poor. The argument is made primarily on grounds of *biological* quality, and on this point it necessarily founders badly, lending itself to all sort of fallacious "natural selection" arguments justifying any given system of social stratification. Incidentally, even the evidence on class differences in fertility is badly represented. Pendell fails to note, for example, that in contracepting populations class differentials are decreasing, a circumstance that further impairs his dismal and tendentious conclusions.

This book is not given to subtleties, for it is a call to action. It is not merely precious academic reservations that bespeak a more balanced and much more penetrating analysis. The real world is also subtle and complex, and even if the shaping of economic and social policy be the mission, it will not be accomplished by a kind of argument that rests on poor facts, specious interpretation, *and* unpopular conclusions.

WILBERT E. MOORE

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TITLES OF NEW BOOKS

Economic Theory; General Economics

GAMBS, J. S. *Man, money and goods*. (New York: Columbia Univ. Press. 1952. Pp. xii, 339. $3.75.)

MARX, K. *A history of economic theories—from the Physiocrats to Adam Smith*. Edited with preface by K. Kautsky. Translated from the French with an introduction and notes by T. McCarthy. (New York: The Langland Press. 1952. Pp. xix, 337. $5.)

Part I of Vol. IV of Marx's *Das Kapital* translated into English for the first time.

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NOTES

The slate of nominees for 1953 officers of the Association as completed by the Electoral College are as follows: For President: Calvin B. Hoover, Duke University. For Vice-Presidents: Eveline M. Burns, New York School of Social Work; Arthur H. Cole, Harvard University; Paul T. Ellsworth, International Bank for Reconstruction and Development; George W. Taylor, University of Pennsylvania. For Executive Committee: Mandell M. Bober, Lawrence College; Gerhard Colm, National Planning Association; Edwin B. George, Dun & Bradstreet; David McCord Wright, University of Virginia. Two vice-presidents and two members of the Executive Committee will be chosen by ballot in the November election.

The annual meeting of the Association will be held at the Conrad Hilton Hotel (formerly the Stevens Hotel), Chicago, Illinois, December 27-29, 1952. The meeting is to be held jointly with allied social science associations. The American Statistical Association and the American Marketing Association have thus far indicated their intention of meeting at the same time in Chicago. Robert T. Glidden, economist for the International Harvester Company, is chairman of the Local Arrangements Committee of the American Economic Association.

OFFICERS OF ALLIED SOCIAL SCIENCE ASSOCIATIONS

American Accounting Association: George R. Husband, Wayne University, School of Business Administration, Department of Accountancy, Detroit 1, Michigan, president; Charles J. Gaa, University of Illinois, College of Commerce and Business Administration, Urbana, Illinois, secretary-treasurer.

American Association of University Teachers of Insurance: C. M. Kahler, Wharton School, University of Pennsylvania, Philadelphia, Pa., president; J. Edward Hedges, School of Business, Indiana University, Bloomington, Indiana, secretary-treasurer.

American Business Law Association: John F. Sembower, Northwestern University, Chicago, Illinois, president.

American Farm Economic Association: George Aull, Clemson Agricultural College, Clemson, South Carolina, president; Don Paarlberg, Purdue University, Agriculture Hall Annex, Lafayette, Indiana, secretary-treasurer.

American Finance Association: Edward E. Edwards, Indiana University, Bloomington, Indiana, president; Louis P. Starkweather, Rutgers University, Newark, New Jersey, secretary-treasurer.

American Marketing Association: Everett R. Smith, Macfadden Publications, 205 East 42d Street, New York 17, New York, president; George H. Brown, University of Chicago, Chicago 37, Illinois, secretary.

American Political Science Association: Luther Gulick, Institution of Public Administration, 684 Park Avenue, New York, New York, president; Edward H. Litchfield, 1785 Massachusetts Avenue, N.W., Washington, D.C., secretary-treasurer.

American Sociological Society: Dorothy Swaine Thomas, University of Pennsylvania, Philadelphia, Pennsylvania, president; John W. Riley, Jr., Rutgers University, New Brunswick, New Jersey, secretary.

American Statistical Association: Professor W. G. Cochran, 615 North Wolfe Street, Baltimore, Maryland, president; Samuel Weiss, 304 Marthas Road, Hollin Hills, Alexandria, Virginia, secretary-treasurer.

Econometric Society: Professor Paul A. Samuelson, Massachusetts Institute of Technology, Department of Economics, Cambridge 39, Massachusetts, president; William B. Simpson, The Econometric Society, The University of Chicago, Chicago 37, Illinois, secretary.

Economic History Association: Earl J. Hamilton, University of Chicago, Department of Economics, University of Chicago, Chicago, Illinois, president; Ralph W. Hidy, Graduate

School of Arts & Science, New York University, Washington Square, New York 3, New York, secretary.

Industrial Relations Research Association: J. Douglas Brown, Princeton University, Princeton, New Jersey, president; R. W. Fleming, University of Wisconsin, Madison 5, Wisconsin, secretary-treasurer.

Institute of Mathematical Statistics: Professor M. A. Girshick, Stanford University, Department of Mathematics, Stanford, California, president; Professor C. H. Fischer, University of Michigan, Business Administration Building, Ann Arbor, Michigan, secretary-treasurer.

Midwest Economics Association: Frank W. Fetter, Northwestern University, Evanston, Illinois, president; C. Woody Thompson, State University of Iowa, College of Commerce, Iowa City, Iowa, secretary-treasurer.

Rural Sociological Society: Howard W. Beers, University of Kentucky, Lexington, Kentucky, president; Samuel W. Blizzard, Jr., Pennsylvania State College, State College, Pennsylvania, secretary-treasurer.

Members of the Association who are planning to travel abroad may, if they wish, obtain in advance a letter of accreditation from the Secretary of the Association.

International Economic Papers, No. 1, a set of translations prepared for the International Economic Association, has been published by the Macmillan Company. The volume is listed at $3.50. A special price of $2.92, including postage, has, however, been made for members of the American Economic Association. To avail oneself of this price, a check must accompany the order and such check should be made out to the Macmillan Company.

Preparation of Problem and Source Materials for the Mathematical Training of Social Scientists

As readers of this journal probably know, a Committee on the Mathematical Training of Social Scientists has been at work for some time. The Committee includes representatives from the following associations and societies: American Anthropological Association, American Economic Association, American Educational Research Association, American Farm Economic Association, American Political Science Association, American Psychological Association, American Sociological Society, American Statistical Association, Econometric Society, Institute of Mathematical Statistics, Mathematical Association of America, and Psychometric Society.

As the result of a suggestion from this Committee, the Social Science Research Council is now sponsoring a small group to work during the summer of 1952. This group will attempt to compile from the literature of the various social sciences lists of problems, extracts from sources, and references to sources that illustrate varieties of uses of mathematics in the social sciences. These compilations are expected to serve a number of important ends—*e.g.*, to provide mathematicians with material for use in texts and courses designed for social scientists, to indicate the general dimensions of the mathematical training appropriate for students of the social sciences now and in the future, and to facilitate the study of mathematics by social scientists for whom organized courses are not available.

This Committee believes that the group referred to would find it most helpful if it could have a wide variety of suggestions from the various areas concerned. A general appeal for such suggestions is hereby made. They should be sent to Professor William G. Madow, Chairman, Committee on the Mathematical Training of Social Scientists, Baker Library, Hanover, New Hampshire, up to August 15; and thereafter University of Illinois, Urbana, Illinois.

Although the Committee does not wish to limit the suggestions to specific types of material, it would prefer greater emphasis on materials relating to the use of mathematics in the social sciences themselves than on those relating to statistics, since the materials necessary for statistics are better known. Moreover, the Committee would suggest that those who respond not concern themselves with questions of duplication of what others

would say, but give as much information as possible. This first request for assistance is aimed at providing those who are interested in this subject with an opportunity to make their views known to the Committee in as general terms as they wish.

Finally, the Committee would appreciate learning where programs of mathematical training intended for social scientists are now in existence or in process of development, and where mathematics at the level of the calculus or higher is required for undergraduate or graduate degrees in the social sciences or may be substituted for another requirement for a degree in a social science.

External Research Catalog

The External Research Staff of the Department of State presently is developing a consolidated catalog of non-government research-in-progress in the social sciences on foreign areas and international problems (excluding U.S. foreign policy and relations with other countries). This catalog is designed to provide a comprehensive guide to research that is not systematically catalogued anywhere else in the country. It includes both (a) research that is in progress, and (b) research that has been completed but not published (and, thus not listed in full in standard references). All scholars, including graduate students, are invited by the Staff to contribute to the catalog, and are invited to benefit by the information contained in it. Address Chief, External Research Staff, Room 602, State Annex No. 1, Department of State, Washington 25, D.C.

New Publication

The first number of *Migration*, a technical bulletin issued under the auspices of the Manpower Division of the International Labour Office, was published in January-February, 1952. *Migration* is to appear every two months in English, French and Spanish editions. Its purpose is to provide information on emigration and immigration as reflected in national law and administrative practice, international activity and technical procedure. It is intended primarily for officials of national administrations, international and non-governmental organizations interested in migration, and persons concerned with migration policy or operations. Contributions in the form of articles, short studies and reports are welcomed.

Deaths

John F. Burke, professor of accounting at the University of Georgia, died February 2, 1952.

John R. Cable, of Stetson University, died December 2, 1951.

John S. Cleland, of Monmouth College, died December 7, 1951.

Feodore F. Foss died October 5, 1951.

Ralph G. Ledley died November 17, 1951.

Sam A. Lewisohn died March 13, 1951.

Roswell C. McCrea died July 2, 1951.

John H. Patterson died August 15, 1951.

Lester Roth, partner in the firm of A. G. Becker & Co., died January 25, 1952.

Appointments and Resignations

Karl M. Arndt has resigned from the University of Nebraska to continue to serve as economist on the staff of the Council of Economic Advisers to the President.

Maurice P. Arth has accepted a position as International Trade and Development economist in the Office of the Director for Mutual Security.

C. W. Baskin has been named head of the department of economics at Randolph-Macon College.

Russell S. Bauder is on leave of absence from the University of Missouri to serve as chairman of the regional Wage Stabilization Board of Kansas City.

Richard F. Behrendt is now serving as technical assistance expert of the United Nations to the Ministry of Industry and Commerce of Paraguay, in Asuncion, and in the fall will take over a professorship in the School of Inter-American Studies at the University of Florida.

Warren J. Bilkey has been promoted from instructor to assistant professor of economics at the University of Connecticut.

Duncan Black, of the University of Glasgow, has been visiting professor of economics at the University of Toronto in the 1951-52 session.

Arthur I. Bloomfield served as financial adviser in Pusan, Korea, to the U.N. Civil Assistance Command for a four-months period ending in March, 1952.

Louis S. Boffo has joined the faculty of the University of Missouri as visiting assistant professor of economics.

Leland L. Briggs has been promoted from associate professor to professor of economics at the University of Vermont.

Robert P. Brooks, emeritus dean of faculties and formerly dean of the College of Business Administration of the University of Georgia, is retiring from teaching duties this year.

George H. Brown has been appointed director of the Retail Food Distribution Program of Research and Education in the School of Business, University of Chicago.

Henry J. Bruton, formerly of Harvard University, has been appointed assistant professor of economics at Yale University.

Edward C. Budd, formerly of the University of Oregon, has been appointed instructor in economics at Yale University.

James W. Bunting has resigned as director of the Bureau of Business Research of the University of Georgia to become executive vice-president of Oglethorpe University.

Carl R. Bye has been appointed associate dean of the Maxwell School of Citizenship and Public Affairs of Syracuse University.

Alfred Zee Chang is now at the Library of Congress in charge of the Library's materials in Chinese in the field of economics.

Frieda Clarke has been appointed instructor in accounting at the University of Georgia.

John Coleman is teaching labor economics at Tufts College.

Inez M. Conley has resigned from the College of Business Administration, University of Nebraska, to accept a position as labor economist in the Bureau of Employment Security, Washington, D.C.

Garfield V. Cox, Robert Law professor of finance, has resigned as dean of the School of Business, University of Chicago.

John S. Curtiss has been instructor in economics at Bowdoin College in the past semester.

John E. Dean has resigned from the University of Georgia to be legal adviser to the Southern Cotton Garment Manufacturing Association.

Oscar K. Dizmang is now economist-business analyst with the Office of Price Stabilization, Spokane, Washington.

Evsey D. Domar, of Johns Hopkins University, is visiting associate professor at the Russian Institute of Columbia University.

Ernest J. Enright is an instructor in marketing at Tufts College.

Harry Ernst is an instructor in the department of economics of Tufts College.

William J. Fellner, of the University of California, has accepted an appointment as professor of economics at Yale University.

Paul L. Ferguson has resigned from Texas A. and M. College to accept an appointment with the Wage Stabilization Board of Dallas.

Marion Gillim has accepted an appointment as associate professor of economics at Barnard College, effective in the fall term.

Willard J. Graham has resigned from the School of Business, University of Chicago, to become professor of accounting at the University of North Carolina.

Albert Griffin has been appointed acting dean of the Lower Division of the College of Arts and Sciences at Emory University.

Harry Henig, on leave from the Illinois Institute of Technology, is serving as director of the Case Analysis Division of the Wage Stabilization Board in Chicago.

George H. Hildebrand, of the University of California, Los Angeles, has been awarded a Guggenheim fellowship for 1952-53 to make a study of wage and employment problems of the Italian economy.

Donald A. Hileman has been appointed assistant professor of marketing at the State College of Washington.

Schuyler Hoslett has been appointed director of the Executive Program in Business Administration in the Graduate School of Business, Columbia University.

John A. Howard has been appointed assistant professor of business administration in the School of Business, University of Chicago.

Marshall C. Howard has been appointed assistant professor of economics at the University of Massachusetts.

Harvey W. Huegy, of the University of Illinois, has been granted a leave to study trade relations between Ireland and the United States.

John E. Jeuck has been appointed director of the Executive Program in the School of Business of the University of Chicago.

Keith W. Johnson, formerly with the Federal Reserve Bank of Dallas, has accepted a position as analytical statistician with the Office of the General Services Administration in Dallas.

Ralph C. Jones has been promoted from associate professor to professor of economics at Yale University.

Frank L. Keller, of Tulane University, has been granted a leave of absence to serve as field director of the Point Four Development Program of the Santa Cruz region of Bolivia.

Milo Kimball has been appointed dean of the School of Business Administration at the University of Massachusetts.

William E. Kuhn has been appointed assistant professor of economics at the University of Wyoming, effective September 1952.

James S. Lanham is resuming his duties as professor and head of the accounting department of the University of Florida after a period of service in the Air Forces.

Richard E. Levitan has been appointed instructor in economics at the Carnegie Institute of Technology.

Vernon W. Malach has been promoted from associate professor to professor of economics and head of the department of political and economic science at the Royal Military College of Canada.

C. F. Marsh has been appointed dean of the faculty of the College of William and Mary.

Harry McAllister has been advanced to the rank of associate professor of economics at the State College of Washington.

E. B. Meyers has been appointed assistant professor of commerce in the department of political and economic science at the Royal Military College of Canada.

E. T. Miller, who has been on modified service in the department of economics at the University of Texas since 1948, has announced his plans to retire fully at the end of the current year.

Ilse Mintz has been appointed assistant professor of economics in the School of General Studies of Columbia University.

Franco Modigliani, formerly of the University of Illinois, has been appointed professor of economics and industrial administration at the Carnegie Institute of Technology.

Alexander J. Morin, of the University of Chicago, is associate editor of the University of Chicago Press and also on the staff of the recently established Research Centre in Economic Development and Cultural Change.

Ruby T. Morris, of Vassar College, has been appointed professor of economics and chairman of the department of economics at Connecticut College for Women.

Herman L. Myers has been transferred from the Bureau of Agricultural Economics to the Office of Production Analysis of the National Production Authority in Washington, D.C.

Milton J. Nadworny, formerly of the City College, is now assistant professor of commerce and economics at the University of Vermont.

Bruce C. Netschert has completed his assignment with the President's Materials Policy Commission and has joined the staff of the Natural Resources Office of the National Security Resources Board.

Ragnar Nurkse, of Columbia University, went to Cairo in March, at the invitation of the Bank of Egypt, to lecture on the formation of capital in underdeveloped countries.

Arthur M. Okun has been appointed instructor in economics at Yale University.

Lawrence Pasel, formerly of St. Lawrence University and the American University of Beirut, has been teaching economics at the University of Idaho in the absence of Erwin Graue.

Florence Peterson is teaching part-time as visiting professor of economics at Rollins College, Winter Park, Florida.

Raymond J. Powell, formerly of Princeton University, has been appointed assistant professor of economics at Yale University.

John C. Redman has been named associate professor of farm economics in the College of Agriculture, University of Kentucky.

Charles B. Reeder has resigned from Ohio State University to accept a position as economic analyst with the Armstrong Cork Company of Lancaster, Pennsylvania.

Frank L. Roberts, of the University of Illinois, has accepted a position as associate professor of marketing at the University of Nebraska.

Robert V. Roosa (formerly Rosa) has been appointed manager of the research department, Federal Reserve Bank of New York.

J. A. Sawyer has been appointed assistant professor of economics in the department of political and economic science at the Royal Military College of Canada.

Sidney Schoeffler has been appointed assistant professor of economics at the University of Massachusetts.

John P. Shelton has been appointed assistant professor of economics and industrial administration at the Carnegie Institute of Technology.

Tillman M. Sogge, of St. Olaf College, has been appointed a member of the Regional Enforcement Commission of the Wage Stabilization Board for Region 8.

Boris M. Stanfield has returned to Columbia University after serving as visiting professor at the University of São Paulo, Brazil, and at the University of Hawaii, Honolulu.

George A. Steiner, on leave from the University of Illinois, has been appointed director of policy development in the Defense Production Administration.

Leroy D. Stinebower has resigned as director of the Office of Financial and Development Policy in the Department of State, to accept a position as assistant to the treasurer of the Standard Oil Company of New Jersey.

D. Gordon Tyndall, on leave from the Carnegie Institute of Technology, is on a Fulbright Scholarship studying the problem of public utility regulation in Austria.

Melville J. Ulmer has been promoted to professor of economics at American University.

Maurice A. Unger has been appointed assistant professor of real estate at the University of Idaho.

Miller Upton, associate professor of finance, has been appointed dean of the School of Business and Public Administration, Washington University.

Frank R. Varon, of the University of Texas, has a Fulbright grant for study in France this year.

Herbert von Beckerath will lecture at the Universities of Bonn and Cologne this summer and will undertake research in industrial developments in Germany.

Donald H. Voss has been appointed instructor in economics in the department of economics and social institutions at Princeton University.

P. N. Vukasin has resigned from the University of Illinois to accept a position as assistant to the economic consultant to the Burmese government in Rangoon, Burma.

Edward L. Wallace has been promoted to assistant professor of accounting in the School of Business Administration of the University of Buffalo.

Robert F. Wallace has been given leave from the State College of Washington to continue in government service.

John J. Walsh has retired from his post of assistant professor of economics in the Graduate School of Social Science, the Catholic University of America.

Gerald E. Warren, professor of economics at Tulane University, has been appointed district price executive, Office of Price Stabilization, New Orleans.

Donald A. Watson has been appointed assistant professor of economics at Coe College.

Nugent Wedding has been promoted from assistant professor to associate professor of marketing in the College of Commerce and Business Administration of the University of Illinois.

Carl F. Wehrwein has completed his assignment with the Economic Cooperation Administration Mission in Vienna and has accepted a position as principal economist in the Dairy Branch, Office of Price Stabilization, Washington, D.C.

William Weiner has been appointed instructor in economics at the University of Massachusetts.

Francis J. Weiss is now scientific consultant to the National Farmers Union in Washington, D.C.

Richard M. Westebbe is on leave from the Economic Cooperation Administration to resume graduate study at Harvard University.

Robert M. Williams has been promoted to assistant professor of business economics and statistics in the School of Business Administration, University of California at Los Angeles.

Dean A. Worcester has been promoted from assistant professor to associate professor of economics at the University of Washington.

Henry E. Wrape has been appointed assistant professor of production management in the School of Business, University of Chicago.

John P. Young is on leave from the Department of State serving as economic adviser to the Chilean Government's Development Corporation.

Willard H. Young has resigned as instructor in business organization and management in the College of Business Administration at the University of Nebraska to accept a position with Arthur Andersen Co.

Walter Zukowski has been appointed instructor in economics at Clark University.

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies.

The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief description of vacancies announced and of applications submitted (with necessary editorial changes). Since the Association has no other way of knowing whether or not this section is performing a real service, the Secretary would appreciate receiving notification of appointments made as a result of these announcements. It is optional with those submitting such announcements to publish name and address or to use a key number. Deadlines for the four issues of the *Review* are February 1, May 1, August 1, and November 1.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Economics, history, political science, sociology: A Midwestern land grant college is seeking a chairman for its Social Science Department, to develop undergraduate and graduate teaching and research program. Age around 40. Ph.D. and special interests may lie in economics, rural sociology, political science, or social anthropology. Unusual opportunity in a long-range program to study a contemporary culture. P150

Business cycle and monetary theory: Small Eastern university has opening for economist whose special interests lie in the fields mentioned. Rank and salary depend on individual. P151

Economic analysis: The Organization of American States is in the market for an economic analyst to teach a course the year round in economic analysis of problems in the development of the national economy at the Inter-American Training Center for Economic and Financial Statistics in Santiago, Chile. The candidate should have a good working knowledge of Spanish. P152

Economists Available for Positions

Consumer economics, economic and social movements, international economic problems (war, economic and social progress, social security, public finance, money and banking), sociology (marriage and the family): Man, 50, married, Ph.D., Illinois, with minor in philosophy. Five years of marriage counseling, with emphasis on premarital counseling; 18 years of college teaching experience; 7 years of industrial experience; 1 year of social work. E127

International economics, money and banking, government and business, labor and industrial relations, theory, history of economic thought: Man, 36, married, B.A., M.A., Ph.D., Columbia University. Five years of top level research with the U.S. Government, including FEA and State Department; 6 years of college teaching, including graduate courses; consultant to Puerto Rican Government, 2 consulting engineering firms, and a Congressional committee; has written 4 books and has 3 others in progress and under contract with publishers. Now employed in private industry; wishes to return to academic life or government research. E243

Economics and sociology: Man, very mature, Ph.D. Desires opportunity. Available on short notice; also for summer. E245

Advertising, marketing, salesmanship, retailing, merchandising, small business operation, business psychology: Woman, 34, married, M.S., New York University, School of Retailing, working towards Ph.D. Six years as copy writer and sales manager with leading department stores and mail order houses; 2 years of college teaching in field; 2 years in government. Presently associated with advertising agency but desires return to academic life. Available in February or September, 1952 E254

Money and banking, fiscal policy, business cycles, international economics, investments: Man, 38, married, Ph.D. Experience as a newspaperman and 5 years of teaching experience. Desires research or teaching position. E263

Economic analysis, business cycles, public finance, money and banking, national income, international economics, statistics: Man, 34, married, Ph.D. residence completed. Seven years as economist-writer with research and investment organization; brief teaching experience; research in Middle East economy. Seeks research, writing, or teaching position, West Coast preferred. E278

Economic history, labor economics, business cycles, money and banking, history of economic thought, introductory economics, economic statistics, public finance, industrial market research: Man, 30, married, completed all examination and course requirements toward Ph.D. at Columbia University, thesis in preparation. Two years of teaching economics; past year economist for large national manufacturing corporation. Desires teaching or research position. Versatile. E340

International trade, economic principles, public control of business, money and banking, history of economic thought, labor problems, business cycles, statistics, business administration: Man, 26, married, B.B.A.; M.S., Columbia University; honors; completed Ph.D. residence requirements and oral examinations at Columbia University, working on dissertation. Extensive teaching experience in economics at large Eastern university. Intensively trained economist with enthusiasm for teaching. Available in September, 1952. E360

Principles, theory, money and banking, international economics, comparative systems, cycles: Man, 27, M.A. Now finishing Ph.D. dissertation at leading university. Teaching experience. Seeks college position. Would consider other work using economics, several languages. E371

Business cycles, economic statistics, money and banking, international economics, economic history: Man, 30, Ph.D. Brief teaching experience and substantial research work. Desires teaching, research, or statistical analyst position. Available in September, 1952. E382

Public finance (including fiscal policy), money and banking, corporation finance, international commercial and economic policies, general economics: Man, married, Ph.D., LL.D. Extensive experience in teaching, research, and local, state and national government service, retiring from well-known American university. Lecturing in foreign university, 1951-52. Available in September, 1952. E385

Insurance, international economics, foreign trade, economic history, business law, marketing, investments: Man, 44, Ph.D. Associate professor, college near Los Angeles; also University of California. Practical experience in insurance and foreign trade. Available for academic appointment, September, 1952. E398

Economics and business administration: Ph.D., professor and department head, interested in summer appointment. Alfred Borneman, 66 S. Main St., Northfield, Vt.

Economic theory, American economic history, business cycle analysis, history of economic thought, labor problems, international trade: Man, 27, married, B.A. (History), M.A. (Economics), now engaged on predoctoral research at the University of Cambridge, England. Teaching experience in both economics and history; desires teaching position with opportunity to continue doctoral research. Available in September, 1952. E402

Economic theory, corporation and public finance, international economics, business and government, labor and industrial relations, marketing, statistics: Man, 28, married, A.B., A.M., Stanford University, Ph.D. course and examination requirements fulfilled, dissertation nearing completion. Now assistant professor, Western college. Available for academic appointment, September, 1952. Also will consider research or advisory position. E404

Economic principles, intermediate theory, labor economics, labor relations, labor history, social security, comparative systems, industrial organization and public control of industry, public utilities and transportation: Man, 32, married, M.A., University of Michigan; Ph.D. expected in February, 1953. Four years of university teaching experience in field; 5 years of government service, mostly War Labor Board; some industrial experience. Available in September, 1952. E405

Labor, economic theory, economic history, money and banking: Woman, 30, now completing dissertation. Three years of teaching experience; some independent field research in labor problems Available in September, 1952. E406

International economics, economic history, problems of economic development, structure of business enterprise, history of economic doctrines, economic theory, national income analysis: Man, 33, married, small family, M.A. in European history, Ph.D. dissertation in preparation, University of California. Five years of college teaching experience; now associated with Western university. Research and government experience; publications record. Interested in teaching position with good research facilities or employment research organization or project in international economics. Available after summer, 1952. E407

Economic principles, consumption, theory and history of ideas, insurance, monetary theory, business cycles, location, statistics, marketing principles and research, sales management, advertising principles, copy and layout, direct mail, industrial, wholesaling: Man, 35, married, B.B.A. in marketing, M.A. in economics. Experience as sales manager, economic, marketing, and opinion researcher; some teaching. Desires position as a teacher, researcher, or sales manager in Northeast. Available immediately. E408

Transportation, theory, government and business, corporation finance: Man, 29, married, Ph.D. Two years of university teaching; 1 year of experience in private industry; 1 year in government service. Desires academic appointment. Available in September, 1952. E409

Economic analysis, labor relations, industrial organization, government and business, corporation finance, business law: Man, 44, married, M.A., LL.B., residence for Ph.D. completed, Columbia University. Four years of college teaching at large Eastern college; extensive practical business and legal experience. At present, high level economist with government. Available for academic appointment in September, 1952. E410

Principles of economics, public finance, money and banking, international economics, economic history, statistics: Man, 30, M.A., course and examination requirements for Ph.D. fulfilled, dissertation in process. Desires college position. Available in September, 1952. E411

Economic theory, money and banking, economic geography: Man, 43, Bachelor of Commerce and Bachelor of Economics of Belgian Universities, Ph.D. of Greek university. Research work at Oxford, England, as a British Council Scholar. Research work in the U.S.A. on a Fulbright fellowship. Author of two books and several contributions to scientific periodicals. Excellent knowledge of Greek, English, and French. Working knowledge of German, Italian, and Spanish. Fifteen years of administrative experience as college secretary; 2 years of teaching experience as assistant professor of economics. Seeks research or teaching position or affiliation with a bureau of economic research. American and European references. Available immediately. E412

Public finance, corporation finance, money and banking, principles of economics: Man, 38, Ph.D. Twelve years of teaching and government experience. Can accept either academic or nonacademic position. Available in September, 1952, or February, 1953. E413

International trade, corporation finance, investments, economic theory, history of economic thought, management, accounting: Man, 29, M.S. (management), M.A. (economics), Ph.D. expected end of 1952, University of Illinois. Brief experience in teaching; 5 years in foreign trade and business administration. Available for academic or nonacademic appointment in January, 1953. E414

Economic systems and planning (Soviet and Eastern European economics), international trade, finance, and economic organization, value and distribution, doctrines, economic growth and development: Man, 41, married, French citizen, M.A., Ph.D., New School for Social Research. Eighteen years of experience as correspondent with economic publications in Europe; many articles, Russian studies at Columbia University; excellent recommendations. Available immediately. Nicolas Spulber, 26 West 90th Street, New York 24, New York.

Economic theory, public finance, statistics, corporation finance: Man, 26, M.B.A., Ph.D., course and examination requirements fulfilled, dissertation nearing completion, Northwestern University. Desires teaching or research position starting from September, 1952. E415

Economic theory, labor economics, public finance, money and banking: Man, 25, M.A., Ph.D. course and examination requirements completed, dissertation near completion and degree expected in February, 1953. Currently engaged in money and banking research. Wishes academic or research position. Available June 1, 1952. E416

Economic development and planning, international economics, industrial management and marketing: Man, 28, B.A. in Economics, St. John's University, Shanghai; M.S., Ph.D. expected in June, 1952, University of Illinois; permanent U. S. visa. Three years of experience in China as junior accountant and as executive assistant to general manager of trading company. Desires teaching, research, or administrative position. Available in June, 1952. E417

[illegible] PRICE THEORY

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[illegible] A. E. A. Volumes

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